

MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest

Vol. 68
No. 17

ESTABLISHED 1882 \$4.00 Per Year
Single Copy 15 Cents

NATIONAL preparedness means infinitely more than merely the building of a great navy or the creation of a large standing army. Important as these are, they are only one step, and that not by any means the final one in guaranteeing to this country safety from foreign attack.

National preparedness will mean the building as rapidly as possible of a strong navy and the creation of an army of at least reasonable size. But more than this, it will mean the organization of all of our industrial forces in such a way as to protect every section and every interest.

In this issue attention is called to the fact that until this country is less dependent than at present in the production of munitions of war, the building of guns, the making of powder and the construction of ships in a narrow stretch of land from Connecticut to Maryland, we are hopelessly unprepared.

We might have a great navy and a great army, and still be at the mercy of an enemy until we have adequately developed in other sections of the country great enterprises for the production of war materials: indeed, they should be called peace materials, for our building of a navy and the creation of an army are not for the purpose of making war, but to make certain of the preservation of our peace.

BALTIMORE, OCTOBER 28, 1915



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MANUFACTURERS RECORD

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

Trade-Name Registered in the U. S. Patent Office

Vol. LXVIII. No. 17.
WEEKLY.

BALTIMORE, OCTOBER 28, 1915.

\$4.00 A YEAR.
SINGLE COPIES, 15 CENTS.

PUBLISHED EVERY THURSDAY BY THE
MANUFACTURERS RECORD PUBLISHING CO.

RICHARD H. EDMONDS, Pres. VICTOR H. POWER, Treas.
FRANK GOULD, Vice-Pres. I. S. FIELD, Sec'y.

RICHARD H. EDMONDS, Editor and General Manager

BRANCH OFFICES:
NEW YORK, 52 Broadway CHICAGO, 1409 Fisher Bldg.
BOSTON, 733 Old South Bldg. ST. LOUIS, 608 Century Building

Description \$4 a year (payable in advance) to United States, Mexico, Cuba, Porto Rico, Hawaii and the Philippines. To Foreign Countries (including Canada) in the Postal Union, \$6.50 a year.

Entered at the Baltimore Postoffice as second-class matter.]

In order to avoid delays, all correspondence relating to news or advertising matters should be addressed directly to the Manufacturers Record, Baltimore, Md., and not to individual editors, officers, employees or any branch office.

THE TEXTILE EXPOSITION AT GREENVILLE SHOULD BE WELL ATTENDED.

EVERY cotton mill official should make arrangements to visit the Southern Textile Exposition to be held in Greenville, S. C., November 2 to 6. Not only should they attend themselves, but they should also send their superintendents, because this exposition presents an unusual opportunity to see firsthand the latest ideas and modern improvements in all lines of textile machinery and supplies.

This is the first time in years that any representative textile machinery exposition has been held in the South, and if this meeting proves the success anticipated, it is planned to have a similar one somewhere in the South every other year. But the success of this meeting is going to depend upon the cotton mill executives themselves. It has been arranged and staged for their special benefit. If they attend in representative numbers, as they should do, it will give heart and encouragement to those who have been working for months and years to bring about a representative textile and machinery and supply exhibit at regular biennial intervals.

Great credit for this exposition is due the Southern Textile Association. The present movement was inaugurated by them, and it was due to their continuous and persistent efforts that final success as been achieved and a definite exposition planned. They have gathered together a total of nearly 170 exhibits, representing every branch of equipment and supplies used by the modern textile mill. These exhibitors have come from all parts of the United States, and have brought with them their very best ideas and improvements, in order to show them to the cotton mill officials of the South.

In no way can these officials learn so much about the advances that have been made in design and construction of equipment for their mills than by attending an exposition of this kind. At the Greenville Exposition they will see this equipment at firsthand. They can watch it in operation and have the well-posted representatives of the different companies explain in detail the various features and merits of the products displayed.

Greenville's location will enable cotton mill officials to attend the exposition with but little loss of time from their regular duties, and the lessons they will learn, the knowledge they will gather, from a few days spent in carefully inspecting the exposition will repay them many times over.

This exposition, therefore, the first comprehensive and complete display of textile machinery, equipment and supplies to be held in the South, deserves the support and encouragement of every cotton manufacturer in the South, and they can best show their interest by personally attending and arranging to send their subordinate officials also.

National Preparedness an Unrealizable Dream Under Existing Iron and Steel Conditions

IRON AND STEEL MEN OWE A DUTY TO THE COUNTRY TO JOIN THE NATIONAL GOVERNMENT IN PROVIDING THE ONLY POSSIBLE TRUE SAFEGUARD.

National preparedness is chimerical, an impossible unrealizable dream, unless radical changes are made in the iron and steel industry.

We have talked about living in a fool's paradise because we are without an adequate army and navy. But a big navy and army will not take us out of a fool's paradise until the National Government and great iron and steel interests lessen the nation's dependence for all its munitions of war upon a limited area along the Atlantic Coast, which in turn is wholly dependent for ore upon two sources that might be cut off in time of war, leaving us utterly helpless.

In view of the suggestion that the National Government should establish an armor-plate plant, it is important that the proper location should be carefully chosen from the standpoint of national welfare. At the same time, the relations of the iron and steel industry to National preparedness should receive full attention.

Practically the entire production of munitions of war and the facilities for building and docking warships are concentrated in a narrow strip of territory from Connecticut to Virginia. In this little strip, 200 or 300 miles in length and extending on an average probably considerably less than 100 miles into the interior from the coast, our gun-making plants, our armor-making plants, our shipbuilding concerns, our powder-making interests are all closely concentrated. It is conceivable that this limited area might at some time in the future be under the control of an enemy, and if this should ever happen before these conditions have been changed, the rest of the country, probably 95 per cent. of its area, would be absolutely helpless, as it would be without arms or the facilities for making arms, and without the facilities for building ships or equipping them if they were built.

Under these circumstances it is a national duty of vital interest to the nation that the Government should do its utmost to develop in other sections, and especially in the South, facilities for the manufacture of armor plate and the making of guns and of munitions of war.

It is also conceivable that our Atlantic ports might be blockaded and that our supply of foreign ores from Cuba, Chile and elsewhere be cut off, and if it should so happen that we were at war with Great Britain (and Heaven forbid that this should ever come to pass), our Lake ports might be so blockaded by land and water as to make impossible the bringing of Lake Superior ore into Pennsylvania and the Lake region. We might, therefore, find ourselves in a position of being entirely cut off from the two sources of ore supply upon which the iron and steel development of the seaboard, of Pittsburgh and of the West is wholly dependent.

These are not visionary suggestions. They are founded on as good reasons as is the enlargement of the naval program now so strongly and so wisely advocated by the Administration. We have been forced to realize that what the peace lovers of the world hoped for a few years ago is no longer possible—certainly, so far as we can now see, for some years to come.

To save ourselves from such overwhelming disaster as that of Belgium, we are compelled to safeguard our country by the development of a navy and an army.

It, therefore, becomes vitally important that all of the facilities for building a navy and equipping an army should be scattered over the country to as an extent as great as is feasible.

For these reasons it would, it seems to us, be most unwise for the Government to add largely to its facilities by the building of new plants for armor plate or kindred work in this limited area in the East, or in that portion of the West which, like the East, is dependent upon foreign or Lake Superior ores. On the other hand, there are sections in the central South having vast stores of iron ore from which can be made as high-grade steel as is produced in this or any other country. Close by these ores are almost limitless supplies of coal and of other materials needed. There are also some sections in the West and Southwest which should also be recognized in any broad scheme for National preparedness. These points are in the interior, far enough away from the Eastern section to justify, and it seems to us absolutely, demand on the part of the Government the establishment of armor-plate and gun-making plants. It is scarcely conceivable that an enemy could at the same time invade the Gulf section and capture that iron and steel territory while invading this Eastern field or cutting off our supply of foreign and Lake ores. Thus by scattering the industry of the making of war munitions the national welfare would be safeguarded to a far greater extent than is possible under present conditions. In this central Southern region there is an ample supply of iron ore without depending upon foreign ores or Lake Superior ores, and likewise limitless supplies of coking coal. The entire Atlantic and Gulf coast might be blockaded and the iron-ore regions of the Lake Superior district captured or controlled without in the least affecting the ability of Alabama and Tennessee and other central Southern or Southwestern States to provide an ample supply of raw materials for any war-munition plants that might have been established in these States.

The MANUFACTURERS RECORD would, therefore, press this matter upon the attention of the public and upon Congress, not from any purely sectional desire of seeing the South benefited, but from the broad national standpoint of safety to the entire country. It seems to us that there is no possible argument sufficiently strong to justify serious consideration that can be advanced against this proposition.

If this presentation be true, and we believe no one can question the truth of the statements made, there can be no assurance of national preparedness so long as the nation is dependent for its war supplies upon a limited area along the Atlantic coast.

It is equally important that these facts should be recognized by the United States Steel Corporation and other great iron and steel interests.

The suggestion of the capture of the Lake Superior ore region and the cutting off of our comparatively small importations of foreign ores is not one-half so chimerical as would have been any predic-

tions eighteen months ago of such fearful conditions as we are now seeing in Europe.

All theories in regard to peace and war, all thought of our being immune from the danger of invasion or of actual subjection by an invading enemy might as well be dismissed from our minds, in view of the horrors which engulf all Europe.

Even a few days before the breaking out of hostilities in Europe, such conditions as now exist could not have been foreseen by any human mind. No man on earth would have dared to predict such a war nor such horrors as have been developed by this war.

In the light of these facts we would be recreant to our country and to civilization itself if we did not undertake immediately to make impossible the overrunning of this country by enemies who might give to us a full measure of the "hell in war" which has been given to Belgium and is being given to Armenia.

Let us not for a moment lay unto our souls the flattering unction that we are entirely safe.

We are not.

The very vastness of our wealth and the knowledge that this wealth could be made to repay the billions that have been expended in Europe's war, taken in connection with our helpless condition to prevent invasion or to carry on a war if we were invaded, is our supreme danger.

It becomes especially important, therefore, and it may perchance some day be vital to the very life of the nation that great metallurgical interests should now be created as rapidly as possible in parts of the South and the West where local ores and coal obviate the dependence upon Lake Superior and foreign ores.

Imagine but for a moment what would be our condition with 80 or 90 per cent. of the iron and steel interests of the country compelled to close because of their inability to get Lake Superior or foreign ores. We would have a catastrophe beside which that of Belgium would be tame.

It would be too late then to try to develop in time to meet such an emergency the vast iron and steel possibilities of Alabama and Tennessee and Texas and other Southern and Southwestern States. And outside of the limited development in the central South and in Colorado, there would be practically no iron and steel-making plants for peace or for war, and never before were iron and steel so vitally essential in war as at the present time.

The United States Steel Corporation owes it to the country, as well as to its stockholders, to recognize that it holds as trustee for national welfare, as well as for stockholders' profit, almost limitless stores of ore and coal in Alabama, and that this trusteeship should be used to develop the iron and steel-making interests of that State on a scale infinitely greater than any plan it has yet formulated.

The Steel Corporation could well afford for the safeguarding of its own future under all contingencies, as well as for national safety, to lay down immediately a campaign for spending \$75,000,000 to \$100,000,000 in developing in the South iron and steel-making industries commensurate with the resources which it controls in that section.

The Steel Corporation could well afford to do this, even if for the time being the profit was not commensurate with the investment.

The very development which would be created by such an expenditure would, however, bring about a local market and a prosperity which would soon make such an investment yield a profit.

Moreover, the Steel Corporation could well afford to begin this work without waiting for the decision of the United States Supreme Court. It is hardly conceivable that the Supreme Court will reverse the unanimous decision of the lower court; for, as the MANUFACTURERS RECORD pointed out last week, even if there had been any ground for this suit when started, there is absolutely no ground for it today, because the discovery of vast ore supplies not owned by the Steel Corporation and the development of great steel-making interests by other companies have made utterly ridiculous any claim that the Steel Corporation is a monopoly in restraint of trade.

The MANUFACTURERS RECORD believes that the Government suit ought to be dismissed. It believes that justice to the Steel Corporation and justice to the public demand that a suit which now has not

a single leg on which to stand, and which ought to be laughed out of court if carried to the Supreme Court, should be dismissed on a statement of present conditions.

Without, however, waiting for such action, we believe it is incumbent upon the Steel Corporation to take the ground that in holding so vast a supply of ore and coal in the South it holds it to some extent as a trustee for the nation as well as for its stockholders, and that from this broad national standpoint it will immediately begin a development commensurate with the hundreds of millions of tons of ore and the billions of tons of coal which it owns.

But the Steel Corporation is not the only great industry that ought to be looking to the South and the Southwest for the establishment of iron and steel plants and the making of munitions of war.

The Bethlehem Steel Co. is risking too much with its vast operations upon its ability to secure foreign or Lake Superior ores; for the time might come when it could secure neither. And what is true of the Bethlehem company is true of the Midvale and of other companies who, in one sense, are staking their entire fortune upon one basket of eggs. They have plants at different points, it is true, but these plants are all in sections dependent wholly upon foreign or Lake Superior ores; and good business judgment and patriotism alike make vitally important a radical change in policy.

We ought to see, and that as quickly as possible, a campaign for national preparedness by the development of great enterprises in sections where local ores and fuel are available in order that the country may be saved from its present absolute dependence upon the two sources of supply which in the event of war could easily be cut off.

Our iron and steel masters and financiers are very wisely urging preparedness on the part of the National Government, but they should recognize that an equal responsibility rests upon them—a responsibility to the country, and ultimately it might be to their investors—to do their full share in national preparedness by developing on the largest scale that can be made justifiable the iron and steel and war munition potentialities of the central South and of other sections where local resources obviate the dependence upon foreign ores and Michigan ores.

INTERRED GERMANS HAD FULL RUN IN NAVY-YARD SECRETS.

Permitted to Wander at Will Through Storerooms and Docks at Norfolk.

—New York Herald.

If the statements made in these headlines from the New York Herald be true, then there must be a degree of asininity in the Navy Department which would bode ill for the country in time of danger.

If these statements are not true, then the Navy Department owes it to the country to categorically deny and disprove them.

Let the country know the truth, whether it has to learn of such rotten slackness as is here charged or learn that such conditions do not and never did exist.

MISSED THE POINT.

THE MANUFACTURERS RECORD in its last issue had a labored effort to show how the Underwood-Simmons bill has hurt cotton and wool. If the high prices at which these commodities are selling are indications of how they are hurt, then give us more Underwood-Simmons bills.—*Cotton and Cotton Oil News*.

The News is slightly off. It evidently didn't read the statement it criticizes. That statement was an official announcement put out by the American Cotton Manufacturers' Association, showing the injury to the cotton and woolen goods manufacturing industry by rapidly increasing imports of foreign-made cotton and woolen goods prior to the beginning of the war, and indicating how, when the war ends, we would be flooded with foreign-made

goods unless the present low tariff should be changed. The statements made had no inference whatever to existing conditions or prices. The News missed the entire point, as do a great many other free-trade papers, when discussing economic questions, for they see only one side of the shield, and insist that there is no other side. Having a pet theory, they stick to it, regardless of facts.

POTASH POSSIBILITIES IN GEORGIA MICA.

GOV. NAT E. HARRIS of Georgia, in an interview published in this issue, refers to potash-bearing mica in Georgia as opening up possibilities for the production of potash. In reply to an inquiry for any further information Governor Harris might have on the subject, Mr. Frederick R. Jones, Secretary of the Executive Department, in the absence of Governor Harris, writes as follows:

In answer to your inquiry regarding "sericite," I beg to call your attention to Bulletin No. 30 of the Geological Survey of Georgia, giving a preliminary report on the feldspar and mica deposits of Georgia, pages 153 to 154. Dr. McCallie, the State Geologist, tells me that the deposits referred to in this Bulletin are simply the beginning, showing only those that had opened up at the time this Bulletin was issued. There seem to be large deposits not only in the vicinity, but throughout the section. In this connection, I wish to call your attention to Dr. McCallie's report to the Advisory Board of the Geological Survey on September 8, 1915:

"In regard to the potash minerals, I would say that the sericite deposits of Pickens county, a potash carrying mica, has attracted considerable attention as a probable source of potash. Mr. Samuel Peacock of New York, a patentee of a process for the extraction of potash from feldspar and other silicates, during June made a personal visit to Georgia for the purpose of investigating the sericite deposits of Pickens county. Mr. Peacock expressed himself to me as being well pleased with the Pickens county material, but he seemed to be in doubt as to whether or not it could be mined and put on board of cars at a sufficient low cost to justify its use in the manufacture of the potash. As Mr. Peacock's process requires a large amount of limestone in the potash extraction, it has been suggested that the plant, which would possibly require a minimum of not less than 100 tons of sericite a day, might be located in Pickens county where limestone in the form of waste marble could be obtained at small cost from the marble quarries in the vicinity of Tate."

There seems to be no question that potash could be produced from this mica with a profit at present prices, especially if the plant is established where the deposits are found, so that only the finished product is put on the cars.

In connection with the cost of producing potash from alunite, as reported in the MANUFACTURERS RECORD last week, from feldspar and from other potash-bearing materials, it is worth while noting, as The American Fertilizer does in a recent issue, that we are not again likely to have as low prices for German potash as prior to the war; and, therefore, it ought to be possible to develop the manufacture of potash in this country on commercial basis which could be successfully maintained even at the close of the war. On this point The American Fertilizer says:

German potash salts, in the forms supplied America prior to the war, were imported at the rate of about 200 tons daily. It will take years after the war closes to supply bottoms for such tonnage. It is extremely doubtful if the prices of German potash immediately prior to the war will ever be realized again for German potash. Some means must be found to pay the endless debt imposed by the existing war, and potash is one of the few means in the possession of what is now known as the German confederation for transferring more or less of this debt to foreign peoples. It is a perfectly safe assumption that fertilizer potash will not fall below one dollar per unit for many years to come, except under a competition other than that of German or Austrian potash mines. This should enable the complete elaboration of feldspar potash recovery processes in advance of any possible price disturbance of foreign origin.

Moreover, it should be borne in mind that there is a pronounced sentiment growing in all parts of this country in favor of adequate protection against this being made a dumping ground for European products at the close of the war; and a measure of protection sufficient to justify the development of the potash industry in this country ought to be assured to American investors who undertake a work of such national importance.

RECOGNITION OF CARRANZA—THE POSSIBILITIES IT OPENS UP.

UNDERWRITING a \$10,000,000 loan to the sisal interests of Yucatan by New Orleans bankers immediately following this Government's recognition of Carranza would seem to indicate a considerable degree of faith in the substantiality of the Carranza government by those who are in a position to appraise the strength and weaknesses of the various aspirants for supreme control in Mexico. The bankers of New Orleans are certainly as well informed on Mexican conditions as any other people in this country. The financial relations between New Orleans and Mexico have always been close, and it is self-evident that the New Orleans bankers are confident of reasonably stable conditions or they would not have undertaken to finance the sisal crop of Yucatan.

St. Louis business men have taken immediate steps to renew business relations with Mexico. St. Louis merchants have long been identified with Mexican commercial activities, and they must have been making careful investigation of conditions at all times since the downfall of the Diaz regime. They must have reached the conclusion that the Carranza government may be relied on to establish sufficiently stable conditions in Mexico to justify a resumption of business relations with the merchants of that country.

Among the people along the Rio Grande border, and with the Texans generally, there is a great deal of candid skepticism as to the ability of Carranza to put down uprisings and suppress revolutions, and should Villa and Zapata refuse to recognize Carranza, they foresee a continuance of disturbed conditions and general disorganization, which will interfere with, if not wholly prevent, a restoration of anything like normal business conditions in the Republic.

Railroad men point out that, no matter how optimistic may be the views of those who are anxious to resume business relations with Mexico, or however successful Carranza may be in restoring peaceful conditions, there are physical facts which will make it impossible to secure anything like normal conditions for at least two years to come. Special reference is made to the fact that the railroad systems of Mexico are in a totally demoralized condition. In some cases entire relaying of tracks will be necessary, and in every instance much road work will have to be done, and practically the entire equipment for the operation of the roads will have to be renewed.

Whatever the final outcome may be, it is the firm conviction of those identified with the movement for the recognition of Carranza that the best possible step has been taken in the circumstances, and that from what might be called the historical standpoint, the broad view of the effect on the future relations with the other governments of the Western Hemisphere, even as affecting the integrity of the Monroe Doctrine and the safety of the United States, nothing could have happened of greater significance or more beneficial influence than the cooperation of the United States with the other Pan-American governments in the solution of the Mexican problem. This point is very clearly brought out in the interview with Hon. John Barrett, Director-General of the Pan-American Union, published elsewhere in this issue. Mr. Barrett points out that the joint action by the governments of the Pan-American has done more to solidify these nations than anything that has happened since the adoption of the Monroe Doctrine.

In Mr. Barrett's opinion, this is a definite beginning and the first time that a definite beginning could have been made in recent years in the effort to settle the Mexican situation. He believes that we can afford to give Carranza a free-handed chance to show what he can do in the way of establishing a stable government; but of paramount importance is the fact that the countries of the Western Hemisphere are working unitedly and sympathetically in the solution of this problem. There is now good feeling toward the United States by all the Latin-American peoples, including even Mexico, so Mr. Barrett declares. Armed intervention in Mexico would unquestionably have aroused suspicions and

jealousies of all Latin-American people, Mr. Barrett holds, and is, therefore, never to be considered, except as a most desperate final resort.

THE ARMENIAN POLICY.

TURKEY has served notice that she will brook no interference with her Armenian policy. It is hardly necessary to define this policy to those who are acquainted with the recent atrocities of this unspokenable people.

While it is true that the record of this world is one of blood and tears, it is also true that the blackest and bloodiest pages of this record have been written by the barbarous Turk. Within the last six months probably not less than half a million unresisting men, unoffending women and innocent children have been brutally assassinated by these sleuth hounds of hell. Men have been cruelly tortured; women ravished and little children cut to pieces before the eyes of their parents. The genius of Satan has been taxed to its limit to devise new means of deviltry, and the resources of the Kingdom of Darkness have been exhausted to meet the demands of these blood-thirsty villains.

The Turkish race appears to be the only one that is impervious to civilization and immune to Christianity. In spite of environment and education, the fearless Turk is, at heart, still the brutal bastard of the desert. He lives to hate, and revenge is his highest ambition. Of all the objects of his hatred, Christ is the chiefest. His unholy hatred of the Armenian is not because he is an Armenian, but because he is a Christian. His propaganda of blood and murder is not animated by his love for the Crescent, but his enmity to the Cross. He hates the Cross as a child of Christ abhors sin.

The triumph of the Turk in the present conflict is, in its last analysis, the triumph of the Crescent over the Cross; the Moslem over the Christian. Professedly, the Turkish nation is engaged in a holy (?) war of extermination. "In the arts of hell refined" they make no secret of their inhuman ambition. With dare-devil boast and fiendish frankness they openly avow their diabolical determination. They revel in their record of riot and rapine, and glory in their accumulated catalogue of cruelty and crime. The tears they have caused to flow would force the Euphrates beyond its bounds, while the blood they have shed would crimson every wave that breaks upon their sinful shores.

Very rightly, America has informed the Ottoman authorities that this Government will view with disfavor a continuation of their schedule of crime. If necessary, we trust our nation will make a much more emphatic protest. And while we shrink with unutterable horror from the thought of our nation becoming involved in war, yet we would prefer even war to a criminal peace, while the world runs red with the innocent blood of Christian men, women and children. How long, oh Lord, how long?—*Western Recorder of Louisville*.

Why blame the Turks? Are they not merely imitating their ally, who sought to arouse the Moslem world to a "Holy War" against Christians?

Why talk about their inhuman cruelty, of women ravished, of little children tortured, of Satan's genius for evil being taxed to its limit to devise new deviltry.

The Kaiser has outdone Satan himself. In hell there must be sorrow and rage and jealousy as the Devil realizes that he has been entirely outclassed.

WELCOME

To those attending the Southern Textile Exposition, at Greenville, S. C., November 2 to 6, a cordial invitation is extended to make their headquarters at the booth of the Manufacturers Record, in the main exhibit building.

This booth has been fitted up for reception and rest purposes. Easy chairs and writing tables have been provided for your convenience, where you can write your letters or make appointments for business conferences.

Our facilities are at your disposal, whether you are a regular reader of the Manufacturers Record or not. Our attending representatives will gladly welcome you and place their services at your command.

Let the Western Recorder paint the picture of the deep damning humanity of Kaiser Wilhelm's soldiers, and it will be far more lurid than that it has painted of Turkey.

The blackest page in all human history heretofore is snow white in contrast with the record Germany is making in cold-blooded murder of women and children and innocent men.

Why should the world shudder because one poor English nurse was murdered in cold blood?

That was a saintly deed compared with the murdering of hundreds on the Lusitania and the murdering of thousands and tens of thousands in Belgium and wherever else German soldiers have been able to carry the flames and the passions of hell.

And yet there are so-called supposedly decent men and women in this country who uphold these practices by upholding the nations guilty of them. Some time ago the foremost minister of Philadelphia—Dr. Russell H. Conwell—said that every man who defended the murder of the Lusitania's passengers was himself a murderer in heart.

SOME ILLUSTRATIONS OF INTOLERABLY BAD ROADS AND OF GOOD ONES.

IN a recent report of a motor trip from Washington, the Nation's capital, to Richmond, the capital of Virginia and of the old Confederacy, between which there ought to be a splendid highway as part of a through line from the North to the South, the following statements were made as to the condition of a part of the road:

Plowing through a sea of red mud beyond Quantico Creek, an effort was made to negotiate a steep grade in the direction of Joplin, beyond which a slight improvement in the road was noticed. From Joplin the route led to Mount Postoffice, about a mile beyond which a fine gravel highway appealed strongly to those in the party. This road continued to Stafford Courthouse, which was reached at 4 o'clock. It was about two miles from this town that the worst roads were encountered on the entire trip. The first steep hill to be negotiated was about 35 per cent. grade, the mud being about two feet deep. Mr. Luttrell attempted to take the hill on high gear, but the car sank down in the mire to a depth of nearly eighteen inches. The mud apron in the front of the machine leveled off the road, scooping it up as the car descended the grade. It was necessary to back down the road about 75 feet, go into second gear and make the attempt to storm the hill for the second time. Slight progress was made by following the same track and scooping more of the mud off the top of the road. A third attempt was finally necessary, this time the car being backed a distance of about 100 feet and the low gear used. The third time the car conquered the sea of mud, and as it shot over the top of the grade it literally took the crown of the hill along with it.

Following this experience a stream was forded about two miles farther on, the water being about three feet deep, which rolled over the top of the radiator, putting the first two spark plugs out of commission for a few seconds. About a mile beyond another stiff grade was encountered similar to the one a few miles back. No chains being used at any time on the entire run, it was necessary to make three separate attempts to storm the hill, the last time being successful.

A country of bad roads is hampered in its development in material things as well as in education and religion. It is vain to expect such a country to make any large advancement in any direction.

Of what use would be the building of schools and churches along impassable mud roads, such as are indicated in this report? And yet there is hope even for the section which is cursed with such a road as is here described.

It was but a few years ago that the road between Washington and Baltimore was, for a considerable distance, in a condition equally as bad. It was only five or six years ago, possibly less, that we happened one day to meet one of the Ambassadors from Europe, who had undertaken to motor from Washington to Baltimore, a distance of forty miles. After five hours of struggling through mud holes and being pulled out of two by mules, he had just reached a Baltimore garage, and, with the local representative of his country, was there arranging to ship his car back to Washington by railroad. Today there is between Baltimore and Washington a perfect piece of road, and along that line one is scarcely ever out of sight of an automobile.

It was only a few years ago that the road between Baltimore and Annapolis, the State capital,

was for a greater part of its thirty miles of length merely a sand bed, and the man who once ventured to motor through these sand beds rarely tried it a second time. The farmers along that road had great difficulty in hauling small loads of produce to Baltimore or Annapolis. Today a trip over that road shows an almost continuous stream of heavily-loaded market wagons, bringing produce into town, or returning from the city loaded with merchandise; and one familiar with the old condition and the present can but marvel at the change that has been wrought.

How much longer will Virginia put up with such impassable and impossible so-called "roads" as the mud holes through which this touring car struggled in the effort of the builders of the car to reach Richmond and display their new model at the Richmond fair?

THE SUMMONS OF THE SOUTH—"COME HOME."

IT is time for the South to call its wanderers home.

Knowing that other sections could not be developed without the energy and the brain power of its people, the South has generously sent to other States missionaries to the number, since 1865, of more than 3,500,000, that they might show to other regions how things should be done.

These Southern men are found in every State in the Union. They rank among the great leaders in finance, in railroad management, in engineering work, in manufacturing enterprises, in law, in the ministry and wherever else men of ability can achieve things.

But in giving to other sections so largely of its own best life the South has impoverished itself to the enrichment of others. In times past this was necessary, because the poverty following the war made it difficult for Southern men to find a field of activity at home, and so they went out from the South to New York, to New England, to the central West and to the Pacific coast. Wherever they went they blazed the trail of advancement. When counted by numbers the total of 3,500,000 is great, but when counted by achievements the aggregate is vastly greater than the numbers indicate.

Commerce and Finance of New York, in publishing the statistics of Southerners and others living in that city, gives the following figures taken from the census of five years ago:

OUTSIDERS IN NEW YORK CITY.

Alabama	2,165	Montana	458
Arizona	393	Nebraska	934
Arkansas	577	Nevada	239
California	4,827	New Hampshire	2,857
Colorado	1,105	New Jersey	69,898
Connecticut	25,255	New Mexico	360
Delaware	2,003	North Carolina	10,736
District of Columbia	4,781	North Dakota	152
Florida	2,399	Ohio	16,549
Georgia	6,798	Oklahoma	194
Idaho	341	Oregon	360
Illinois	12,928	Pennsylvania	54,904
Indiana	4,356	Rhode Island	5,655
Iowa	2,712	South Carolina	8,229
Kansas	1,266	South Dakota	199
Kentucky	4,520	Tennessee	2,425
Louisiana	2,331	Texas	2,387
Maine	6,693	Utah	320
Maryland	12,562	Vermont	5,205
Massachusetts	34,977	Virginia	28,862
Michigan	5,238	Washington	753
Minnesota	2,138	West Virginia	1,279
Mississippi	1,028	Wisconsin	3,190
Missouri	5,443	Wyoming	341

Commenting on these figures that paper says:

Nothing statistical has been so surprising to us as these figures. If it were not for the profound respect we have for the Census Bureau, we might doubt them.

Only 237 Texans in New York! Is it possible? It has seemed to us at times there were that many here bossing railroads, serving on the bench or in borough presidencies or getting shamefully rich in corporation practice. And surely there are nearly that many Texans here running New York banks!

Next to the figures regarding Texas, those of Virginia are most astonishing. To anyone who has gone about New York and in theater or restaurant has seen nine-tenths of the men get up and give the Rebel yell when the band played "Dixie," it is inconceivable that there are only 28,862 Virginians resident in New York. There hardly is anything a gentleman will confess so readily as that he is a Virginian after he has given the Rebel yell. There is no place where the Rebel yell and "Dixie" are so popular as in New York. Most persons thought this was because the city had so many hundreds of thousands of Virginians—F. F. V.'s—resident here.

The more these figures are studied the more they dis-

point. It is made to appear that there are 10,736 North Carolinians. This must be a mistake, as is also the 6798 charged to Georgia and the 8229 credited to South Carolina. There are no Southerners in New York except Texans and Virginians. There used to be a North Carolinian, but he always apologized, and now he has moved away.

If it is true that there are only 237 Texans and 28,862 Virginians in New York, where are the 54,904 Pennsylvanians and 69,898 Jerseyites hiding out? The Pennsylvania delegation probably has decreased since Harry Thaw left town, but aside from the Steel Trust people and the coal man, who ever saw anyone in New York who would acknowledge he was a Pennsylvanian?

The heading the Census Bureau puts on the above table is "Outsiders in New York City." That's wrong. They are Insiders in New York. The Westerners and the Southerners own and manage the metropolis. The native-born New Yorker who ever gets anything in New York gets it by grace of the insiders from without. It has been that way for 50 years, and there is not any probability that it ever will change.

It is not surprising that Editor Price was surprised at the comparative smallness of the number of Southerners, for he had judged by their achievements that they made up a large proportion of the total population. The number of Southerners in New York, as given by the census, figures up 92,273, but, measured by what Southerners have done, the figures ought to be ten times as great. Nor is it surprising, considering the number of Texas bankers and railroad men who hold foremost positions in that city, that he thought nearly all leading New Yorkers were Texans and naturally he supposed for similar reasons that those who were not from Texas were necessarily from Virginia.

Instead of counting Southerners by the size of the numbers in New York and elsewhere, they must be counted by brain power.

Lloyd George was once introduced to a great political gathering by a man who had never known him and who was not very much enamored of some of his political views, and, therefore, possibly with an idea of casting a slight slur upon the distinguished Welshman, said to the audience, with somewhat of a sneer in his voice:

"I had supposed that the speaker of the evening was an imposing man of commanding size, but I am compelled to introduce to you a gentleman of very small stature."

Mr. Lloyd George, in replying, said:

"In the country from which I came men are measured from their shoulders upward and not from their shoulders down."

Southern men must be measured in the same way, from shoulders upward.

All Southerners feel about their native State as do the people of Virginia, whose love for their native land is illustrated in the story of the man who died and went to Heaven. At one point he found a great enclosure, barred on all sides and even on the top by iron railing.

Amazed at such a situation, he asked St. Peter how it was that in Heaven there seemed to be a prison.

"Well, said St. Peter, "the people in that enclosure are Virginians, and they so long for their native State that we can only keep them here by fencing them in."

We insist, therefore, that Commerce and Finance has done a grievous injury to the Tar Heels and the Georgia Crackers and the natives of other States when it suggests that they will not stand up to be counted. A Carolinian ashamed of his State! A Georgian not ready to advertise Georgia by proclaiming that as his native land! Perish the thought.

Many of the Southern people in the North are imprisoned by their environment and by their business. To them these prison bars do not, by any means, hold them in a land of heavenly delight. They are held in the North and West by their interests, though their thoughts turn longingly to the South.

These Southern people who have done so much for themselves and for the country in other sections ought to be turning their attention back to their native land. They have been away too long.

It is time for them to come home, and the MANUFACTURERS RECORD would urge that they turn their feet this way and follow their longings that they may begin to take their part in the development of the most blessed land on earth.

While these things are true, we would at the same time remind the South that many of these

people went out from this section because they could find a broader field of opportunity elsewhere and broader thinking on great economic questions and a better understanding of the value of strong upbuilding forces than at home. The South must do its part in bringing about conditions which will bring these wanderers home.

HOW TO DEVELOP SOUTH'S TOURIST BUSINESS.

THIE announcement is made that Atlantic City, that marvelous place of marvelous hotels, not content with being the world's greatest summer resort and with being a very great winter resort, is now putting forth a combined effort to make its winter business rival, if not surpass, that of the summer. In connection with its great and wonderful hotels it is spending money lavishly to make the facilities for the enjoyment of its visitors as complete as possible and to advertise its attractions even more broadly than heretofore. The entire life of Atlantic City is centered on providing as many advantages and attractions as possible to secure and hold tourist travel and to make these facts as widely known as possible.

Its amazing success ought to be studied by every tourist resort in the South. There are a great many places in the South, even where tourist business is already developed, where far less attention is given to the comfort of visitors than can be found in Atlantic City. It is because the hotels in Atlantic City are untiring in their efforts to make their guests comfortable that they draw at all times so many tens of thousands of visitors. The average Southern tourist-resort hotel does not begin to give to its guests the same attention and the same care that can be had at Atlantic City, though, of course, some of them are equal to the very best in the land. This is all the more surprising when so many of these Southern-resort hotels are managed by Northern men, who ought to know how to cater to the very best advantage to Northern and Western guests.

In the spring and early fall Atlantic City hotels are extremely careful to see that ample heat is available for every room in the house at any moment that a guest desires it. They take into account the fact that many of their guests are semi-invalids or aged people, who want more heat than the robust man who lives outdoors and who wants no heat. They take care to provide the heat for the invalid, the semi-invalid and the aged, and then the man who does not want heat can live on the porch or open his windows or keep the heat shut off from his bedroom to suit his convenience; but the other guests are not frozen merely to accommodate the fellow with too much heat in his blood.

Florida hotels, on the other hand, to a very large extent, go on the principle that it is always warm in Florida, which is not true, and that it is not necessary to keep steam going so that it may be available when needed. There is not a spot in Florida which is warm enough every day in the winter not to need steam heat, and yet there are some big hotels in Florida where steam heat is not available except it be in the halls or lobbies, and then it is by no means always available at the time when needed. One day in a cold hotel has often driven tourists from Florida and made them vow never to return.

Many people go to Atlantic City, preferring to stand the cold of winter days in preference to going to Florida, because they know they are absolutely certain to have thoroughly heated hotels and be able on every bright day to walk or ride in rolling chairs up and down its wonderful Boardwalk, and they can find amusements without end. Something is being done every hour of the day for their entertainment.

Until the South takes hold of these problems as seriously and handles them as vigorously as Atlantic City has done, it will not measure up to its opportunities. Thousands of people who go to Atlantic City during the winter should, and doubtless would, be drawn to Florida if they found in that State the same hotel advantages that they find at Atlantic City.

Co-operation Instead of Destructive Competition

THE DOMINANT NOTE OF THE MEETING OF THE AMERICAN IRON AND STEEL INSTITUTE

[Special Correspondence Manufacturers Record.]

Cleveland, O., October 23.

The dominant, all-pervading note of the meeting of the American Iron and Steel Institute was—as it has been since the organization was formed—helpfulness, co-operation, fellowship, instead of competition carried out to the disregard of the rights of others.

At this meeting, which was the largest and most enthusiastic ever held—the attendance being the more remarkable because of the extremely rushed condition of affairs at home in the plants of these manufacturers—this ideal of modern business was, if possible, carried to a higher plane than ever in the past.

In the abundant prosperity which has come upon the industry it was not overlooked by those who made addresses that this condition was primarily and almost wholly due to the European war.

And yet, as one man whose name is known on two continents said, "there isn't a man here tonight who would not gladly forego all the prosperity which is attending his business if by so doing this most horrible war could be stopped." Such an outburst of applause greeted his statement as to leave no doubt in the minds of everyone who heard it that it was but expressing the sincere thought of all present, and must have given each of his 700 hearers a higher appreciation of his fellow-countrymen and business associates.

Adequate preparedness against possible aggression; the great necessity for the restoration of protective tariff laws to forestall foreign competition when the needs of Europe, after matters there are more settled, shall compel foreign manufacturers to find an outlet for their goods at any price that can be obtained, and the placing of the tariff in the hands of a commission of experts instead of leaving it to those who are not sufficiently informed to deal with a problem which has such dire possibilities for disaster to the entire country were discussed as vital needs of the hour.

Judge Gary said in his address:

"The total wealth of the United States, according to the last published figures, is more than one-fourth of the aggregate of all the nations, and it is rapidly increasing. Many of us believe that we may become and remain the leading nation financially, commercially and industrially, provided nothing unnecessary is done by our people to prevent. Personally, I do not agree with the statements which have been made that, at the close of the war, we may expect in this country a prolonged continuance of the great prosperity now experienced, especially if we do not have protection against the results of cheap labor and the impoverished conditions abroad, which are inevitable. I do think that, with wise administration and with the co-operation of the State and National governments, our industries will be able to recover from the injurious effects of the war much more rapidly than those of any other country, and that within a few years we shall be more successful than ever before."

A discussion of welfare work and "safety first" for employees occupied a large part of the time at the evening meeting. The discussions were such as to have proven extremely helpful to every business man and of interest to manufacturers in every line.

Moving pictures were shown of some of the things that are being accomplished along these humanitarian lines, as also pictures of very great interest showing the interior working of pipe-making and wire-drawing plants.

Hearty commendation of the members present and of the committee of arrangements was accorded the technical papers which were read. The wide range of research work shown by these papers was commented on very generally.

Besides President Gary's address, received, as his addresses always are, with great interest, the following papers were read:

"Electric Furnace for Heating Billets, Castings, Etc.," by Thaddeus F. Baily, president the Electric Furnace Company of America, Alliance, O.

"Modern Methods of Burning Blast Furnace Gas in

Stoves and Boilers," by Ambrose N. Diehl, assistant general superintendent Carnegie Steel Co., Duquesne, Pa.

"The Developments of Alloy Steel for Commercial Purposes," by Edgar D. Rogers, general sales manager United Steel Co., Canton, O.

"Under-Advertising of the Steel Business," by George

H. Jones, vice-president Inland Steel Co., Chicago, Ill.

"Recent Developments in Sintering of Iron Ore," by Bethune G. Klugh, chemical and metallurgical engineer American Ore Reclamation Co., New York city.

"Casting Steel Ingots," by Henry M. Howe, professor of metallurgy, Columbia University, New York.

Publicity For Corporations Judge Gary's Advice*

By ELBERT H. GARY, Chairman, United States Steel Corporation.

"The public be damned." Many years since it was openly charged that this expression was used by a business man of great prominence. There has been a prevalent belief that the charge was based on fact, and it has caused a feeling of prejudice which has been exceedingly harmful to the business interests of the country.

It is doubtful if the statement was ever made by any one of great importance, particularly by the gentleman to whom the same was attributed. Whatever the truth may be in regard to this well-advertised and much-discussed expression, it is no doubt true that the sentiment which it conveys has in days gone by existed in the minds and actuated the conduct of a considerable number of the leading business men of this country and other countries during various periods of their history. Included in this class are men of intelligence and influence in all the various departments of industrial activity.

Within a few years, comparatively speaking, we have listened to the arguments of distinguished business men who insisted that if they violated no rule of law, if they withheld from the public nothing which the law positively and affirmatively compelled them to disclose, they were without fault, even though a large portion of the public might be adversely affected by a failure to reveal information which might be received in an official or fiduciary capacity or as the result of circumstances which gave to an individual a decided advantage over others. Most of us know of cases where officers of corporations have acquired wealth by acting for themselves to the prejudice of others who were interested and were not in a position to protect themselves because of the lack of publicity. Some have dealt, to their great advantage, in the markets of the world upon advance knowledge of what might be expected as the outcome of conditions or facts not generally known at the time and before the facts were communicated even to the other stockholders. They violated no rule of law, and probably, in their opinions, no rule of moral conduct. This is a charitable view to take.

It has in the past been considered by men of probity and high standing that private corporations, so-called, as distinguished from public or quasi-public corporations, were literally private, and that the public had no greater right, legal or moral, to inquire into the affairs of the corporation than it had to question the personal matters of the individual or family. Sometimes the management of corporations, including the boards of directors, have withheld from the general public facts which directly affected the public interests, and even though no rule of law was violated, yet widespread harm was done. In many cases men of prominence and influence have been totally indifferent and defiant when considering the public welfare.

It is needless to say that, because of this attitude on the part of some of the business men, the whole fraternity has been seriously affected and has suffered unjustly. For a period of years big business, so-called, the good with the bad, was antagonized to an extent which materially interrupted its normal and legitimate pro-

cess; and it is believed this was occasioned in part by the suspicion created from the failure to take the public into the confidence of private enterprise so far as practicable and proper.

The general public and private individuals have been in the past too far apart for the good of both. Lack of knowledge often breeds unnecessary and hurtful antagonisms, and many have suffered even though they were not personally at fault.

PRINCIPLES OF PROPER PUBLICITY.

These casual remarks are preliminary to a brief discussion of the topic of publicity which is one of the most important questions of the day. Much has been said and written upon the subject during the last few years, and apparently there have been contrary opinions. It is believed, however, that there is really not much difference in the minds of intelligent and fairminded men as to what is desired, although in the consideration of any important question there will be found those of extreme views who, on one side or the other, will insist upon that which is unreasonable. If the public is apprached in a fair spirit it will generally reciprocate.

There are from time to time many facts in private business, some of great importance, which cannot properly be made public and ought not to be insisted upon. All who are present know by actual experience, and every other intelligent person will recognize the fact, that in current business affairs where competition is essential, there are always a great variety of questions which must be treated as private and withheld from publication in order to stimulate business and accomplish success. This is and will always be the rule, though there may be exceptions in order to meet the exigencies of special conditions. If a man in business should open every detail to the inspection of all others he might seriously interfere with his own progress and benefit no one, except such as might be disposed to profit unfairly at his expense, while, if he declined to disclose these private matters, nobody would be injured. Neither the public nor anyone except the individual person or corporation involved is entitled, on any ground, to possess the kind of information now under discussion. It is not necessary to specify the facts pertaining to individual affairs which are strictly private; any man may apply the principle to his own matters. Perhaps it is impracticable to draw a definite line between the facts which should be given to the public and those which may be considered private; and quite probably there should be an impartial public tribunal to determine; but this is another question. "The public" as used might comprise large or small numbers.

It is not practicable to determine a standard for publicity which is exact and applicable to all cases. Circumstances and conditions must be considered; but a general rule may be stated thus: There should be published whatever of business matters the public is legally entitled to know, and also whatever may affect the pub-

*Address as president of the American Iron and Steel Institute delivered by Judge Elbert H. Gary, chairman of the United States Steel Corporation, at the opening of the Ninth General Meeting of the Institute, held at Cleveland, O., October 22, 1915.

lic interest and may be exposed without detriment to the corporation or individual concerned.

PROPER LEGISLATION REGARDING PUBLICITY.

Legislation or administration of laws or any practice of governmental agencies that seeks to go further than this rule is vicious and should be condemned. I believe thoroughly in publicity, so far as it is practicable and proper. We should not be like owls. It should go without saying that the officials of a corporation ought to keep the stockholders promptly and fully informed, so far as possible, without damage to its current business. They have no moral right to profit individually to the detriment of other stockholders as the result of information officially obtained.

However, during the present decade there has been a pronounced change in the attitude of large business interests concerning the disclosure of facts and figures to the general public. Many now, voluntarily and without the requirement of law, make regular and complete reports so that anyone interested may know the results of the business and the general policy of the company; and whenever requested by representatives of the press they furnish facts in corroboration or denial of rumors which are considered important when the information can be given without prejudice to the business and appears to be of concern to the public. Probably it will not now be denied that the average business man is quite disposed to be accommodating in this respect.

WISDOM OF REASONABLE PUBLICITY OF BUSINESS AFFAIRS.

And what follows? It will not be questioned that the great business interests of the country have been benefited by this change in disposition toward the public, which has become less distrustful of capital and its controlling influences. It has been more considerate of the rights and claims of those engaged in great enterprises and less inclined to listen to the plea of the demagogue. Indeed, it has patiently and fairly heard and read all that has been said in favor of granting relief to any concern that sought assistance on a fair and reasonable basis; and not infrequently, because of a public sentiment that the request was just, it has been granted. Included among those who have seemed to change their opinion toward the business interests are multitudes of wage-earners, of business men of small means, of educators, lecturers and editors, of the leading thinkers, writers and public speakers of the country. There is abundant evidence that at present the great general public is willing to meet halfway the individual or the corporation in the determination of all questions that affect private or public interests.

Is it too much to urge that from every standpoint it pays the business man or any man possessed of information which affects the public weal to disclose the same so far as practicable and reasonable? Is it too much to insist that publicity is the cure for many of the ills from which the country has been suffering in the past? Publicity has never done as much harm as secrecy. The individual or the corporation with a disposition to publish whatever facts were proper to be known has, without many exceptions, been treated justly, while those who have been defiant, arrogant and secretive have suffered. So far as I can see, the great business men of this country are, at the present time, in close contact with the public. They are striving to work together for the good of all. We shall see great and favorable results.

These observations relating to private men and enterprises apply with equal force to public officials, to municipalities, States and governments. The public is entitled to know what public officials are doing and what policies are being considered or enforced, though, of course, it may, and often does happen, in individual cases, that information cannot be generally given out without injury to the cause involved; and in such cases the responsible official must withhold publicity temporarily, and, possibly, in some cases, permanently. It is fair to say, public officials have often been as indifferent to the rights and interests of the general public as private officials or persons have been. It would be better for all concerned if the officials of municipalities and even States and countries were more inclined than they have generally been to confide the knowledge in their possession to the people at large.

PROPER PUBLICITY WOULD HAVE PREVENTED PRESENT WAR.

This idea has peculiar application to the present situation in Europe. If the masses of the people of the different nations engaged in the terrible conflicts that are now waging in Europe were fully informed of all the facts, is it to be supposed the wars would be much longer continued? If they and every one of them, in the armies or at home, knew, as now published in our newspapers, that the daily cost of the war is \$85,000,000, or at the rate of \$30,000,000,000 per year, an annual interest burden, at 5 per cent., of \$1,500,000,000, and that the indirect loss is about as much more; if they were aware that, on the basis of the war being prolonged to next February, there will have been killed in battle at least 5,000,000 men, deaths from sickness 2,500,000, and permanently crippled 5,000,000 more—and these the very best; if they could see that 75 per cent. of the men in the armies who survive will never fully recover, physically or morally, from the effects of their service and association; if they realized that their countries are drifting, may, speeding into bankruptcy and must necessarily hereafter and for many years be at a decided disadvantage in the race with other nations for progress and success; if they understood that on the present basis of pension payments in the United States the amount to be paid for this purpose in consequence of the war will approximate \$1,000,000,000 per year; if the leaders, the monarchs, the few who plan and control and command and know in advance and in detail what has been and is being done and is intended for the future, were to communicate all the facts to the public, when it could be done without prejudice to the daily conduct of the war; if all these startling facts and figures were of universal knowledge, would not the masses of the people, including the soldiers in the ranks, rise up in such vigorous protest against a continuance of the conflict as to compel the men in control to find some way of bringing it to a satisfactory termination and for the establishment of a basis which would prevent future prolonged wars? If, indeed, before the wars were started the masses of the people of the different countries had been informed that wars were to be started, and the reasons or lack of reasons for starting them, would they have submitted to their precipitation?

It is not too much to demand that the people should know the reasons for the commencement and the continuance of the pending wars and they should understand the awful consequences. Those who are directly affected and must bear the burdens are, in a large measure, ignorant of the facts which have been suppressed, partly at least, because knowledge of those facts would prevent a continuance of the most stupendous, if not the most unreasonable, destruction of life and property the world has ever witnessed.

I leave this subject by proposing as a substitute for the quotation referred to at the beginning of these remarks the following from the Bible (Romans XIV:7):

"For none of us liveth to himself, and no man dieth to himself."

THE DEVELOPMENT OF ALLOY STEELS FOR COMMERCIAL PURPOSES.*

After reviewing the history of alloy steels from prehistoric times to the present, Mr. Edgar D. Rogers of the United States Steel Co. of Canton, O., said:

"The manufacture of alloy steel tube stock has received great impetus in this country since the war began. In fact, many consumers in this country have learned that a high-grade product of alloy steels can be obtained from the American steel makers. Steels which were formerly purchased abroad are now being produced by American manufacturers with satisfactory results. Therefore, the American steel maker, as well as the maker of finished articles heretofore imported, can hope to retain this trade, it having been fully demonstrated that American steels are equal in quality to the foreign steels.

"The railroads have been far less active in the adoption of alloy steels than the automobile manufacturers, though during the past few years there has been on their part a greater realization of the merits of alloy steels effecting greater safety when operating at high speeds.

"The saving in weight in construction is a factor

*Extract from address delivered at meeting of American Iron and Steel Institute, Cleveland, O., October 22-23.

PRESENT BUSINESS CONDITIONS.

The business men of this country, particularly those engaged in the iron and steel trade, have reason to be thankful for the present conditions, which are very prosperous. The furnaces and mills are generally operating to full capacity, and prices received for many, if not most, of the commodities produced are larger than they have been during the last few years and should result in profits.

We are at peace with all the world, and it seems likely that the wise policy which has permitted this state of affairs will be continued. We sincerely hope and pray that the wars which are raging in Europe may soon be brought to a close and a basis reached for the prevention of prolonged wars in the future.

Apparently we are to have a period of industrial peace in this country. Many of the antagonisms which have hitherto been so hurtful and which have prevented natural business growth have disappeared, and legitimate business will, therefore, have opportunity to progress in accordance with its deserts.

No doubt the sudden and marked improvement in conditions during the last six months is due, in a large measure, directly or indirectly, to the purchasing necessities growing out of the wars, but there are other reasons.

THE FUTURE OF THE UNITED STATES.

The total wealth of the United States, according to the last published figures, is more than one-fourth of the aggregate of all the nations, and it is rapidly increasing. Many of us believe that we may become and remain the leading nation, financially, commercially and industrially, provided nothing unnecessary is done by our people to prevent. Personally, I do not agree with the statements which have been made that at the close of the wars we may expect in this country a prolonged continuance of the great prosperity now experienced, especially if we do not have protection against the results of cheap labor and the impoverished conditions abroad, which are inevitable. I do think that, with wise administration and with the co-operation of the State and National governments, our industries will be able to recover from the injurious effects of the wars much more rapidly than those of any other country, and that within a few years we shall be more successful than ever before.

The value of good crops we all understand and appreciate. Evidently the seasons' crops are, in most respects, excellent, and with a good market therefor the farming communities will be prosperous and the country at large will be benefited.

The American Iron and Steel Institute is to be congratulated on the good work it is doing and the high reputation which it deserves and has secured, and particularly on the splendid services which are being rendered by the young men, including those who are producing at our meetings, for our benefit, most admirable discussions of various topics which directly affect our industry.

THE DEVELOPMENT OF ALLOY STEELS FOR COMMERCIAL PURPOSES.*

that the railroads cannot well overlook, as during the past few years the trend has been to tremendously increase the size of locomotives. This cannot be done without a decided increase in weight unless an alloy steel is used.

"The first obstacle in securing a more universal acceptance of alloy steel by the railroads has been the lack of preparedness on their part to properly heat-treat. I wish to make myself clear on this point in particular, namely, that an alloy steel without heat-treatment is but little better than a carbon steel, and in some cases more dangerous. Sound business principles should prompt the user to heat-treat in order to obtain the maximum efficiency for which the consumer pays the additional cost for alloy above carbon steel. Proper heat-treatment will in many alloy steels approximately double the static strength and will at the same time produce a higher degree of ductility. Railroad shops, as a rule, are woefully lacking in proper equipment for heat-treatment, and until they provide furnaces of close and uniform operation and control, dependable heat-measuring apparatus, suitable quenching facilities and mechanical methods of handling the material it will be impossible for them to realize to the fullest extent the

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degree of superiority of the alloy steels over the carbon steels.

The steel maker can furnish the axles, side rods and other forgings heat-treated and rough-turned, finished or ready for finishing, but he can only furnish such parts which are not in the course of manufacture subjected afterward to any hot work, and parts where no greater hardness than is consistent with good machining is essential.

A proper heat-treating equipment would be of great service to the railroads also in the rebuilding or repairing their present rolling stock with durable alloy steels.

"I predict that the next few years will show a greatly increased demand for alloy steels from the manufacturers of railroad equipment, machine tools, engines, mining machinery, farm tractors, aeroplanes, etc.

"Alloy steels will also occupy a larger field in marine construction, particularly in submarine work.

The aeroplane manufacturers are already calling for the highest grade of electric furnace alloy steels. If we review the wonderful development of aeroplanes in the last few years we can readily get a better idea of the greater possibilities in the future.

The field for the development of the tractor engine offers one of the attractive American manufacturing possibilities. The successful development of tractor engines in a large measure will depend on the increased use of alloy steels, so that the tractor may be lighter in weight and stronger in construction.

Many other manufacturers have up to this time overlooked the great possibilities in the use of alloy steels in their products. There is a wide field for development.

The experience of alloy steel makers during the past seven years shows a steadily decreasing cost of production and a decreasing selling price due to many changes in manufacturing methods. Some mills which are now specializing in alloy steels have developed as the result of their experience methods of manufacture which are quite dissimilar in many phases to the manufacture of common steels. The waste product has been greatly reduced, this having been accomplished by the reclaiming of material which was formerly rejected. Heretofore the practice was to discard a very large percentage of the heat which resulted in high cost of production. Economical methods put into effect resulted in a higher quality of steel and a better practice. While chipping, grinding and reclamation of steel in other ways entail a higher cost per ton for the making of the steel, they have resulted in ultimate decreased cost and cleaner billets, producing not only a greater yield of bars but a finished material free from defects and imperfections. This is beneficial not only to the consumer, but also to the manufacturer who by conscientiously cleaning his stock is assured that the material will remain sold and give satisfaction.

Citing my company for example, rejections by the trade during the past seven years have declined very materially; that is, from 5 to 10 per cent. seven years ago until during the past few years average rejections have been less than one-half of 1 per cent.

Lower costs are due also to decrease in cost of some of the alloys, as for instance ferro-vanadium, and to lower cost in heat-treating, because of the greater amount being treated together with improved design in furnaces to facilitate handling the stock. Lower selling prices will generally result in the further expansion of tonnage.

The perfection of the electric furnace for steel melting has enabled the manufacturer to duplicate by this method many steels which were formerly made in the crucible, and at a reduced cost. There is a large opportunity for introduction of such steels for use where the excessive cost of machining necessitates an absolute minimum of rejection, and which steels cannot be made successfully in the open hearth. This is especially applicable to parts where under rigid inspection minute defects cause rejections.

The advancement made in the manufacture of alloy steels in recent years is a tribute to the steel makers and speaks for the progress, the increased efficiency and years of hard work on the part of the steel manufacturer necessary to accomplish this result.

From one point of view this remarkable efficiency of practice is a greater achievement than some of the metallurgical successes in the field of alloy steels. It is a homely story of human effort which is only fully appreciated by the steel manufacturer."

Unification of Pan-American Nations the Supreme Result of Carranza Recognition

[Special Correspondence Manufacturers Record.]

Washington, D. C., October 25.

The recognition of the Carranza government in Mexico is of more vital importance to the United States than anything that has happened since the promulgation of the Monroe Doctrine.

This is the substance of an interview given me today by Hon. John Barrett, director-general of the Pan-American Union. We had discussed the wisdom of the Carranza recognition, and I had referred to the doubts which have been expressed in many quarters as to the ability of Carranza to establish a firm, stable government.

"There is no question in my mind about the wisdom of the step that has been taken," said Mr. Barrett; "in fact, it is of the utmost significance and importance to our country that this action has been taken by our President in conjunction with the representatives of the other Pan-American nations. The European war created the opportunity for the peoples of this continent to get together and the settlement of the Mexican question has been the occasion for joint action in a way to bring together all these nations as nothing else could have done.

I believe Carranza will establish a stable government. Withholding munitions and food supplies from Villa, Zapata and any other leaders of insurrections will make it increasingly difficult for successful insurrections to be carried on. Even should pacification be not immediate or entirely complete, if the people of the United States co-operate in every way in their power they can materially help to make the Carranza government completely successful. It is our duty to contribute in every way possible to the successful establishment of a stable government at this time, and it is the hope of all of us that this result may follow the recognition of Carranza.

However, if it should develop in the course of time that, notwithstanding the most faithful co-operation and helpfulness on our part, as well as on the part of other Pan-American peoples, the Carranza government may fail, we have nevertheless made a definite beginning. Carranza is the peg to hang something on. He is a definite starting place, and, of supreme importance, the settlement of the Mexican question has enabled the Pan-American peoples to get together. From the broad Pan-American point of view, the joint recognition of Carranza by the United States and the other governments of the Western Hemisphere has done more to secure unification of the Pan-American countries than anything that has happened since the Monroe Doctrine was adopted. We have the peoples of the Pan-American countries with us now, and if we had undertaken to settle the Mexican question alone, a degree of suspicion, enmity and actual hatred would have been engendered that we never could have recovered from. With the close of the European war we would have been in an exceedingly embarrassing, not to say dangerous predicament. As it is now, all the nations of the Western Hemisphere are standing solidly together, bound together by feelings of friendship and a common interest.

and this union of spirit will be found of utmost advantage to us as well as the South American countries when new world relations have begun to be looked for by the nations of the old world after the close of the European war.

"I, myself, have great faith in the ability of Carranza to successfully establish a stable government. The outbreak in Mexico has been an evolution and not a revolution. Slowly, but surely, the people of Mexico are emerging from a condition of prostration. Outside of the enormously rich resources of the country on which to build a great nation, the character of the Mexican people is really substantial. If you take any peon boy in Mexico and send him to college he will graduate as bright a pupil as the others in his class. There is nothing basically deficient in the Mexican character, and if the Mexican is treated with sympathy and kindness he will be our friend.

"As I told some New York capitalists and bankers last week, there will be great opportunities for investments in Mexico, and the men and money of the United States will be warmly welcomed and entirely safeguarded. It will be necessary, however, for our people to go with a spirit different from that in which they went in times past. There will be no opportunities in the future for exploiting the people and the resources of Mexico to the disadvantage of the Mexicans. Going with the proper spirit, with the intention of doing simply the square thing with the Mexican people, our capitalists and investors will be warmly welcomed and there will be great opportunities for profitable activities in Mexico from now on."

Baltimore Selected for Builders' Exchange Convention.

The Board of Control of the National Association of Builders' Exchanges announces that its next annual convention will be held in Baltimore, Md., February 22, 23, 24, 1916, with headquarters and meeting at Hotel Emerson.

The association extends invitation to all interested in building construction to attend the convention.

J. M. Vollmer, Louisville, Ky., is secretary of the association.

Double Shifts at Maryland Plant.

A recent large contract received by the Morris Iron & Steel Co., Frederick, Md., will make it necessary for the Morris plant to operate on a day and night schedule. The contract amounts to nearly \$180,000, and calls for single-duty cast-iron and steel lathes, each weighing 4200 pounds and having dimensions of 18-inch swing by 8-foot 6-inch bed. The first instalment of the contract is for 322 lathes. New machinery will be added to enable the company to meet the demand for this order.

LOW-GRADE IRON ORES MADE AVAILABLE BY SINTERING.*

Mr. Bethuna G. Klugh of the American Ore Reclamation Co. of Pittsburgh, in the closing paragraph of an interesting paper on the "Mechanical Development of Sintering Iron-Bearing Materials," said:

"The sintering and desulphurizing of fine ores and concentrates is daily opening into a wider field. The fear that with the development of the iron industry and the increased consumption of ore, that much leaner ores must be used, is obviated by the use of the sintering process. There is probably more metal disseminated through rocks carrying 35 to 40 per cent. iron than in the known rich deposits in this country, and which can readily be reclaimed. The concentration of these magnetic ores has in many cases produced a product which, while rich in iron, has also been so fine in size as to

make it undesirable for blast-furnace use; but the sintering of these concentrates converts them at low cost into a mass, cellular in structure, rich in iron and highly desirable for blast-furnace use. The relation of fine ores to sinter is best described as that of flour to biscuits, and in each case the treated product is more readily digested. The waste paint rock of the Mesaba mines, carrying 22 per cent. water, responds readily to sintering and yields an ore with 52 per cent. iron. There is a large annual tonnage of burnt pyrites which can be converted by sintering into a valuable ore, and when the copper is objectionably high it can be leached out before sintering. It is evident, therefore, that the development of the sintering process secures to the iron industry a supply of rich ore for a long distance into the future."

*Extract from address delivered at meeting of American Iron and Steel Institute, Cleveland, O., October 22-23.

\$10,000,000 for Mexican Sisal Industry, Loaned by Bankers of New Orleans

[Special Correspondence Manufacturers Record.]

New Orleans, La., October 23.

Recognition of the Carranza de facto government in Mexico by the United States and the several powerful republics to the south has acted as a wonderful stimulus on Mexico's commercial and financial affairs. Immediately upon learning that the United States had decided to acknowledge Carranza's sovereignty, representatives of the Henequin Growers' Association of the Mexican peninsula States and a coterie of New Orleans bankers closed a deal by the terms of which New Orleans will ultimately become the sisal importing and manufacturing center of the United States. New Orleans bankers have agreed to finance the present crop of sisal for the Mexican, and became a party to a loan contract for \$10,000,000 gold.

No better evidence of the State of Louisiana's foresight in providing municipally-owned and operated warehouses could be had than through the successful termination of the negotiations to make New Orleans the henequin importing point for the vast Mexican plantations. The ample storage facilities installed at New Orleans will enable the port to handle the crop without trouble, and it has been stipulated by the terms of the \$10,000,000 loan that the gold will be secured by warehouse receipts on henequin stored in the State-owned terminals at New Orleans.

Incidentally, the extension of credit to the henequin interests of Mexico has led to the establishment of another steamship line out of the port of New Orleans. The ships will be operated direct to Progreso, furnishing an excellent medium of communication between the two ports. When the preliminaries have been gone over and the sisal crop started toward New Orleans plans will be announced outlining the erection of a cordage factory. While considerable of the sisal will be shipped to the interior of the United States, it is believed that the bulk of it will be made into bagging at the port of receipt.

New Orleans has always enjoyed an extensive business with the peninsular Mexican States, largely through the shipments of sisal grass. Previous to the reign of anarchistic conditions in the republic a big portion of the crop was shipped to Boston. The International Harvester Co. always has exercised a controlling influence on the staple, but there seems to be a spirit of independence on the part of the Mexicans at present, and they are determined to finance as well as raise the fibrous product of their native soil. Conservative estimates place the value of the Yucatan and Campeche crops at over \$125,000,000, despite the setback received on account of the incessant political wranglings in the republic.

Pending the time when they can manufacture most of the henequin at New Orleans, the crop will be stored in the public warehouse, subject to the call of the American manufacturers. It was stated that approximately \$15,000,000 worth of the staple would constantly be kept in storage, and with a regular steamship service between New Orleans and Progreso, the question of keeping the supply up to the mark will be elementary. The Henequin Growers' Association is composed of some of the wealthiest men in Yucatan and Campeche, and the liberal financial arrangements accorded them in this country has done much to bring them into closer business relationship.

Prominent in the deliberations leading up to the extension of the credit were Dr. Victor A. Rendon of Yucatan; Julio Rendon, Merida; Francisco Villavincio, Mexican Consul at New Orleans, and General Salvador Alvarado, Governor of the State of Yucatan. Governor Alvarado kept in touch with all angles of the deal by means of cable communication, and the successful ending of the conference was hailed with great satisfaction in Mexico. Lynn H. Dinkins, president of the Interstate Trust & Banking Co., and Sol Wexler, president of the Whitney-Central National Bank, New Orleans institutions, signed the loan agreement.

While the news of the deal involving large American and Mexican business interests created widespread speculation, persons conversant with the developments in Mexico did not appear at all surprised. Very little

industrial activity of any sort has taken place in Mexico during the past three years, and the coming of a new day, the dawning of an era of unequalled prosperity, is expected to draw many millions of American gold into the business exploitation of the southern republic.

The knowledge that unlimited opportunity for trade and financial dealings are to be had in the several countries south of here has but recently impressed itself upon the people of the United States. During the many years that they have remained dormant others have crossed the seas and possessed themselves of privileges rightly belonging to the United States. That this condition will shortly be changed cannot better be explained than through an understanding of what the port of New Orleans has done to overcome the disadvantages of "commercial unpreparedness."

Before another decade has passed away New Orleans will have made provision for a considerable share of the import and export business of every country in South America. Backed by the increasing power of the Mississippi Valley, urged on by the knowledge that she has the prestige and the ability to act as the gateway of the valley, New Orleans has expended and contracted to expend over \$130,000,000 in perfecting her natural advantages.

In discussing different phases of the deal which has cemented the business relations of New Orleans and the henequin growers of his native country, Senor Victor Rendon stated in part:

"The fact that the loan was arranged with two of the biggest bankers in the entire South is particularly gratifying to us, and we believe that it will encourage more American financiers and capitalists to look to Mexico for investment at this time. The fact that the leading financiers of New Orleans have participated, with such earnest sympathy, in this important step toward the early rehabilitation of Mexico is certain to be received favorably throughout Mexico. I have found that the New Orleans business men, as well as bankers, are awake to the great possibilities which have been opened to this city by the recognition of the Constitutional government, and I sincerely believe that New Orleans will record a marked increase in her commercial relations with Mexican ports."

LOUIS J. HENNESSEY.

HIGH SCHOOL FOR DALLAS TO COST \$300,000.



SOUTH DALLAS HIGH SCHOOL, DALLAS, TEX.

In line with similar notable improvements by other Southern and Southwestern cities, Dallas, Tex., is actively engaged in erecting and planning to erect a number of handsome and commodious school buildings. Among these is the South Dallas High School, which is under construction and will cost when completed and equipped more than \$300,000. This structure will be fireproof, of four stories and basement, with steel frame, faced with vitrified brick. It will have concrete floors, composition roof, and will be equipped with the fan

Electric Vehicle Makers in Annual Convention.

The Electric Vehicle Association of America held its sixth annual convention in Chicago last week, the sessions extending over two days.

The meeting was attended by about 400 delegates representing every line of the electric vehicle industry. The papers read dealt with subjects of special importance at this time in the industry and afforded an opportunity for discussion that brought out many important phases of electric vehicle manufacture and operation.

In connection with the meeting there was an exhibit of electric vehicle equipment and appliances adjacent to the convention hall. These afforded the delegates an exceptional opportunity to view and compare the latest achievement in the industry.

Among those exhibiting were:

American Taximeter Co., mileage recording devices, New York city.

Cutler-Hammer Manufacturing Co., battery charging devices, Milwaukee, Wis.

Baker Company, R. & L., electric brougham, Cleveland, O.

Electric Products Co., Wotton automatic rectifiers, Cleveland, O.

Electric Storage Battery Co., storage batteries, Philadelphia, Pa.

Elwell Parker Electric Co., industrial truck, Cleveland, O.

General Electric Co., battery charging devices, motors and controllers, Schenectady, N. Y.

Gould Storage Battery Co., storage batteries, New York city.

Hertner Electric & Manufacturing Co., Hertner battery charging devices.

Leonard-Bundy Electric Co., rheostats, Cleveland, O.

Lincoln Electric Co., Lincoln battery charges, Cleveland, O.

National Carbon Co., carbon brushes, Cleveland, O.

Ohio Electric Car Co., electric brougham, Toledo, O.

Philadelphia Storage Battery Co., storage batteries, Philadelphia, Pa.

U. S. Light & Heating Co., storage batteries, New York city.

Willard Storage Battery Co., storage batteries, Cleveland, O.

The following officers were elected for the ensuing year:

President, Walter H. Johnson; vice-president, E. S. Mansfield; treasurer, H. M. Edwards; directors, W. H. Blood, Jr., P. D. Wagoner, G. H. Kelly and J. F. Gilchrist.

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"Confidence, Prosperity and Pride in Georgia"—Gov. Nat E. Harris

[Special Correspondence Manufacturers Record.]

Atlanta, Ga., October 18.

In response to a request of the representative of the MANUFACTURERS RECORD, Governor Nat E. Harris of Georgia made the following interesting statements about the business conditions in the State:

"The opportunity of presenting to the world the condition of the State of Georgia through the columns of your paper is one that I gladly welcome. The more I investigate the condition of the State and the various resources and activities of our people, the more pride I feel in the Commonwealth.

"The outbreak of the European war retarded the progress of what appeared to be a wave of great prosperity in Georgia, and caused uncertainty and retrenchment, so that in many cases great hardship ensued. The principal foundation of our prosperity is the cotton crop. The great crop of 1914 was harvested at a time when there seemed to be no early prospect of a market, and a good deal of it was disposed of at much below the cost of production. The market for other products of our fields, mines, quarries, forests and industries suffered correspondingly.

"The serious conditions our people had to meet necessitated economy, and in many cases a readjustment of their manner of living and their methods of business has been far-reaching in its effects, and the benefits derived therefrom, it is hoped, will continue always.

"The upward trend began shortly after the first of the year, with the advance in the price of cotton, although the good effect was slow in developing. Our farmers curtailed the acreage planted in cotton and the amount of commercial fertilizer used. Two important results grew out of these causes: The cost of raising cotton, I am informed, was cut an average of about three cents per pound, and the output was curtailed to such an extent that the demand for cotton is now very much greater than the visible supply. This has created a very great demand for the product, and is carrying the price to a point more nearly commensurate with its value.

"In reducing the acreage of cotton our farmers have planted a greater acreage in grain than ever before in the history of the State. I am informed that there was 100 per cent. greater acreage in wheat sown than ever before, with a yield of 96 per cent. more than the last previous year. There was an increase of 78 per cent. in the yield of oats over 1914, and the Department of Agriculture estimates a yield of 70,000,000 bushels of corn, against 59,000,000 in 1914. These crops would have been materially increased except for certain weather conditions that reduced the average yield this year. Having made so much more grain than ever before, our farmers are much less dependent upon other sections for their farm supplies. It is believed by people in touch with the situation that this lesson has been thoroughly learned, and the measure of independence of other sections that has been attained is appreciated and will be maintained.

"It is anticipated that a measure to be introduced at the coming extraordinary session of our General Assembly establishing a uniform system of warehouses over the State, if passed, will furnish a steady market for other staple farm products from this State in addition to the market that has always existed for cotton. Heretofore the inability to readily handle grains and other staple products in this State has militated against the diversification of crops.

"There are two strong reasons why the large cotton crops of past years will not soon again be reached: The first reason is the greater acreage planted in grain, as above stated; the second is that it is now practically impossible to get the necessary amount of potash to make high-grade fertilizers. Commercial fertilizers will therefore be much inferior to those of past years, and will not produce as heretofore. In addition, the price will be very much higher, and there will be probably a smaller amount used than in years prior to 1915. As these conditions prevail throughout the cotton belt, it means that succeeding years' crops will be smaller than past years', the cost of production less and the price correspondingly increased.

"Our people realize that these conditions mean that the cotton raised in the State will be of much greater value than outside purchases necessary to produce it, and the 'balance of trade' should be largely in favor of our people.

"The fruits of Georgia constitute another source of prosperity that should not be overlooked. Georgia peaches are famous for their excellence, and are a source of fine revenue during the summer months of the peach-growing section.

"There is a rapidly increasing production of apples in North Georgia, the quality of which cannot be excelled by any other section. Plums, grapes and melons add largely to the incomes of our growers.

"The Commissioner of Commerce and Labor informs me that there have recently been and are now being made large increases in the capacity of the cotton manufacturing plants of our State. New spinning and knitting mills are being built and the capacity of old ones being enlarged. There are now in Georgia 176 textile mills, with a capital of \$40,000,000, having 2,216,000 spindles, 43,778 looms and 3,573 knitting machines. There are 254 fertilizer plants, with a capital of \$42,000,000, and 176 cotton-oil mills, with a capital of \$14,120,000.

"In connection with this statement about cotton mills, I wish to correct a statement that has been going the rounds of the press, to the effect that there are 93,000 children employed in the factories of Georgia. The United States census report of 1910 shows that there were in that year 104,000 men, women and children in industrial pursuits in Georgia. The Georgia Department of Commerce and Labor has reports showing that in the textile mills there were employed in 1914 a total of 39,000 men, women and children, divided as follows:

Males under 18 years of age.....	4,386
Males over 18 years of age.....	19,405
Females under 18 years of age.....	4,196
Females over 18 years of age.....	11,022
Total.....	39,000

"There are very few children employed in any of the industries of the State other than textile mills. This illustrates the exaggerations to be found in many of the stories detrimental to this State that have appeared in the public press in recent months.

"I am informed by the State geologist that the business of our great marble and granite quarries is rapidly increasing, on account of the resumption of building activities. The prices of manganese ore, baryta, mica and bauxite have practically doubled within the past 12 months, in consequence of which the large deposits of these ores in this State are being rapidly developed.

"In Pickens county there are large deposits of sericitic, a potash-bearing mica. The process of extracting the potash from this mica requires a large quantity of limestone. This limestone is available in the form of waste marble at the quarries in the same county and neighborhood. While the method of extraction makes the cost greater than that of the cheaper potash of Europe, the continuation of the present war for a long period will probably mean the use of these materials for fertilizer until the European product is again available.

"Within the past three or four years there has developed in our coast counties a large industry in the taking and shipping of fish, oysters, shrimp and prawn, which industry is rapidly growing. The extraordinary session of our General Assembly, which convenes in November, will have before it a measure looking to the further protection of oysters, shrimp and prawn, and the extension of this industry. This has become an important and growing element in the prosperity of our coast counties in the Southeastern part of the State.

"A pleasing feature of the development of this state, and one that is sure to have a tremendous influence on the prosperity of our people, is the rapid extension and development of our improved road system. I am informed that Georgia already ranks high among the

States in improved highways, and the development is being carried on with increasing momentum. The effect of these improved roads, of course, is to give our people easier and cheaper methods of transportation for themselves and products, as well as to enable them to learn more about the great resources of our State. There has been inaugurated and carried out during this year a series of 'Seeing Georgia Tours,' the purpose of which has been for citizens of the several sections of the State to cover in automobiles other sections of the State and get better acquainted, and the effect has been to open the eyes of a large number of patriotic and intelligent representatives of our people, who have taken these tours, to the glories that are to be found at our doors.

"A striking indication of the return of prosperity that was apparent early in September was the unusual promptness with which public-service corporations paid their 1915 taxes to the State. Proclamation of the State tax rate was made the 27th day of August, and I am informed that almost the entire amount of taxes due by these corporations was paid into the treasury within three weeks thereafter, although the assessed values and the tax rate were both higher than in 1914, when there was considerable delay in collecting this revenue.

"About the middle of September the schools of the State resumed operations following the summer vacation. Almost without exception the numerous and excellent higher institutions of learning, both public and private, report a greater number of students than ever before in their history. This condition would not occur except at a time when our people are feeling the effect of present prosperity and looking hopefully toward the future.

"Evidences of returning prosperity, or prosperity that has arrived, are to be found also in greatly increased bank clearings over 1914 and the excellent condition of the banks of the State as shown by their reports. The systematizing of our banking system has, I am informed, reduced the average rate of interest paid on money loaned in this State, and a further adjustment is anticipated by which money will be made even easier to our industries of all kinds and at a lower rate of interest.

"Numerous visitors come to this office from all sections of the State, and almost without exception a note of confidence, prosperity and pride in the State is voiced. Building activities have been resumed throughout the State; people who have been forced to economize in all lines are now resuming their ordinary standards of living; long standing obligations are being paid; money is at hand for the customary trade in luxuries as well as in the necessities of life. Our people, as never before, are realizing the advantage of educational training, and every sign points to the greatest era of prosperity in the history of our people.

"The developing resources of the State of Georgia have been a marvel to those who have informed themselves. The research departments of our State government and educational institutions are showing untold and unlimited resources of mine, forest, field and stream, and I wish to repeat of Georgia What I have stated before:

"A great State to work for, my countrymen.

"A great State to live for.

"A grand State to die for and be buried in her soil."

A. SYLVESTER EDMONDS.

Cereal Production in Russia.

Under date of July 23, 1915, the International Institute of Agriculture, Rome, Italy, published the following preliminary estimates of crops in European Russia (54 governments) for 1915: Winter wheat 301,000,000 bushels, spring wheat 463,000,000, all wheat 764,000,000; winter rye 942,000,000, spring rye 7,000,000, all rye 949,000,000; barley 492,000,000, oats 959,000,000, and maize (corn) 79,000,000. Compared with final returns for 1914 crops, these forecasts for 1915 indicate an increase for winter wheat of 40.3 per cent., spring wheat 29.3, all wheat 33.4; winter rye 19.6, spring rye 28.1, all rye 19.7; barley 30.9, and oats 32.7 per cent., while the maize in 1915 is expected to be 3.2 per cent. less than in 1914.

Work of a Progressive Railway in Campaign of Preparedness

NASHVILLE, CHATTANOOGA & ST. LOUIS HAS PROVIDED LARGER MOTIVE POWER AND OTHER FACILITIES TO MEET IMPROVEMENT IN TRAFFIC CONDITIONS.

[Special Correspondence Manufacturers Record.]

Nashville, Tenn., October 20.

Instead of following a policy of retrenchment, the Nashville, Chattanooga & St. Louis Railway has been wisely looking to the future. According to the statements of its officials, this line, in proportion to its mileage (1230.76 miles), spent as much for maintaining and improving its property last year as any other road in the South, if not more. The annual report just issued to the stockholders shows that during the year expenditures under the head of additions and betterments were made as follows:

Road.....	\$564,514 79
Equipment.....	425,564 83

Belief in an impending improvement in conditions was expressed last December by President John Howe Peyton, of this progressive Southern road, when he said: "I have an abiding faith in the South, in her people and in the recuperative power of her commerce. I believe that the future holds much in store for this section, and that we are on the edge of an era of great prosperity. And as the railroads have been, and will continue to be, the controlling factor in bringing about such prosperity, I believe they will naturally share in it."

In the belief that better times were in store and that prosperity's advance agent was "just around the corner," the Nashville, Chattanooga & St. Louis Railway began early in the year to increase its motive power. Ten new Mikado type freight engines were purchased, and at the same time six new Pacific type locomotives were ordered for the passenger service.

The engine shown in the illustration is one of the big freight haulers, with a tractive power of 51,000 pounds, cylinders 25x30, drivers 58 inches, weight over all 264,300 pounds, weight on drivers 205,000 pounds. This engine pulls 1750 tons over the Chattanooga division (southbound) and 1500 tons northbound.

While this new motive power was bought with the expectation of increased traffic, there was another object also in view. To meet the increasing cost of materials, labor and everything else that entered into the operation of a railroad system, it was necessary to increase the train tonnage in order that operating costs might be reduced proportionately, and at the same time to enable the road to meet the demands of an ever-inconsistent public for better service.

With the installation of these heavier locomotives and the increasing of the trainload came the proposition of heavier rails on certain sections of the road not so equipped. New 90-pound steel rails were laid on 18.41 miles of the Chattanooga division, and on the Atlanta division 29.98 miles of 80-pound rails were laid in addition to .86 mile of relay 85-pound rail, while on the Memphis division 11.68 miles of new and relay 80-pound steel rails were laid.

Extensive yard improvements were made at Cravens yard, just out of Chattanooga, and at Hollow Rock Junction during the year. At the former place several miles of additional tracks were put down and the entire mechanical plant removed from Chattanooga, thereby eliminating the smoke which had been caused by switching in the central yards. Arrangements were made for the rearrangements of the team tracks at Chattanooga, thereby increasing the facilities for handling business for the shippers. An office building, oil and sand houses were constructed at Cravens, also a new 90-foot concrete turntable operated by electric power, and a 10,000-gallon steel water tank erected. At Hollow Rock Junction, on the Nashville division, the yards were rearranged and extended and several new tracks laid. A steel automatic coaling station was also erected in the yards, which reduced the cost of coaling engines and enabled the abandonment of three other stations that had formerly been operated by hand.

During the year the company built a telephone line

railways will derive any considerable benefit therefrom. We have no choice in the matter, however, since we are acting under the specific orders of the Interstate Commerce Commission."

Work has recently been started on the erection of car building and repair sheds adjoining the company's shops in Nashville. These new sheds will be constructed of sheet iron, and while more or less temporary in construction, at the same time they are of considerable magnitude, covering a space 116x200 feet. This addition to the shops was authorized on account of increasing business and the necessity for keeping up car repairs, and will result in an increase in the car-building forces, and, incidentally, will contribute to the general betterment of business with the Nashville merchants for the Nashville, Chattanooga & St. Louis Railway, the largest employing agency in the city.

from Nashville to Chattanooga (151.15 miles), by which train orders are now handled. The result is much increase in efficiency with material reduction in the cost of service.

Several new stations were built during the year, and the station here shown illustrates the type of station



LARGE FREIGHT LOCOMOTIVE ON 90-FOOT TURNTABLE.

which the road is erecting at some of the smaller towns. It is built of stucco, and is practically fireproof, at the same time convenient and attractive.

A new two-story office building has been erected on the company's property in Nashville, made necessary on account of the Federal valuation work and the need for office space for the additional employees necessary to carry on the preliminary work. In reference to this work, the annual report of the road says: "This work is proving costly, and it is not now apparent that the

Notwithstanding these improvements, and the fact that the roadway was kept up to its usual high standard, with an expenditure of \$1251.50 per mile for maintenance last year, the expenses have been reduced to meet existing conditions. This is shown in the annual report just issued, in which it is set out that, as compared with the previous year, there was a decrease of \$1,841,801.14 in gross revenues; there was also a decrease of \$979,817.48 in expenses. While a decrease in net operating revenue of only \$861,983.66 was shown



NEW STATION AT RESACA, GA.—STUCCO CONSTRUCTION.

for the year, gross operating revenues decreased nearly \$2,000,000. The gross operating revenues for the year were \$10,936,532.62, and the total operating expenses were \$9,099,621.95.

Another example of preparedness as practiced by this road is shown in its co-operation with the Chicago, Burlington & Quincy Railroad in the building of the Paducah & Illinois Railroad, which has recently been completed, and which will soon be in operation. This railroad will form the connecting link between the Nashville, Chattanooga & St. Louis and the Burlington, and will bring to the South considerable traffic from the great Northwest. At present this connection is by transfer boats between Metropolis, Ill., and the incline on the Kentucky side of the Ohio. There is now in process of construction at Metropolis, Ill., the Paducah & Illinois Railroad bridge, which work it is estimated will cost \$3,000,000 and will take three years to complete. This structure will have one of the longest truss spans in the world, the main channel span being 720 feet in length. The bridge will be 5700 feet from end to end, and will be above the high-water line all the way.

Realizing that the agricultural development of this territory would add much to the traffic of the road eventually, the Nashville, Chattanooga & St. Louis Railway has again exhibited the progressive spirit of its management in the establishment of demonstration and experiment farms along its line. At present there are such farms at Tullahoma, Murfreesboro, Decherd, Sewanee and Dickson, Tenn., and another to be operated at Martin, Tenn., next year. There are 475 acres under cultivation, with 50 more to be added in 1916. Attention is also given to furthering the livestock interests of its territory, and the road has recently inaugurated a plan whereby communities of farmers may secure a pure-bred bull to be used in improving their livestock.

ROY G. BOOKER.

New High Records in American Exports.

Figures furnished by the Bureau of Foreign and Domestic Commerce, Department of Commerce, reveal new high records in American export trade and export balance. September, 1915, exports totaled \$297,766,750 and exceeded by \$79,526,749 the total for September, 1913, and by \$141,714,417 that for September, 1914. September imports this year aggregated \$151,422,831, being less by \$19,662,012 than those of September, 1913, and more by \$11,712,220 than those of September last year.

Nine months' exports this year totaled \$2,529,575,095, compared with \$1,467,401,989 last year and \$1,733,422,158 two years ago. Imports for the nine months' period of 1915 were valued at \$1,302,281,591, against \$1,410,711,874 last year and \$1,327,385,071 two years ago.

The September export balance was \$146,343,919, being nine times as much as the export balance of \$16,341,722 in September, 1914, and only \$41,693,371 short of the export balance for the entire fiscal year 1910. The nine months ending with September last show an export balance of \$1,227,293,504, an increase of \$1,170,000 over that for the corresponding period of 1914 and \$821,256,417 over that of 1913.

Duty-free imports comprised 71.6 per cent. of the total imports for September, 1915, and 61 per cent. of those of September, 1914. Their increased percentage this year reflects the marked growth in imports of factory materials, mostly on the free list.

Gold imports during September totaled \$42,042,648, exceeding by \$40,008,658 the month's exports of gold, which were \$2,033,990. In the nine months ending with September gold imports aggregated \$265,871,213 and gold exports \$12,936,680, making the net inward gold movement \$252,934,533, compared with a net outward movement of \$117,714,832 in a like period of 1914 and a net outward gold movement of \$27,879,671 in a like period of 1913.

Convention of Public Utilities Association.

On November 18 and 19, 1915, a convention of the Public Utilities Association of West Virginia will be held at White Sulphur Springs, W. Va. This association is composed of electric railways, electric light and power companies, water companies and telephone companies. A very general attendance of representatives of these utilities is expected.

Oklahoma Oil Men "Thinking in Millions" As Prices Steadily Advance

[Special Correspondence Manufacturers Record.]

Oilton, Okla., October 23.

Investments in the oil fields of Oklahoma and in the entire Midcontinent field are considered a better proposition at the present time than at any other time during the past 18 months. Excepting only that period during which oil was being marketed at anywhere from \$1 to \$1.05 a barrel, oil field investments were never better than right now. And they are even better now, for the reason that there is an ascending price for crude, the demand is greater than the supply and all conditions indicate that the market will go to \$1.25 a barrel at least. Many oil men contend that it will go to \$1.50.

An investigation of present conditions in the Oilton district as well as in the other fields of the State was brought about during the past 10 days through inquiries received from Eastern capitalists—men who are now figuring on putting a big bunch of money in this territory. These men made inquiry because they had been told that the great slump in the total production of this entire field, including the old Cushing pool, had been so great as to destroy the basis for big investments. They had not been told, however, that this very slump, whatever it may be, is one of the most important features toward creating better conditions and making investments even more attractive.

While it is true that the total production has fallen, yet the increase in the price of crude oil has more than offset this. Half the production today is worth exactly what the total was at its highest point, last April, when the production was hovering around 300,000 barrels a day. But the less amount of oil today is worth far more than that great volume was.

The 150,000 barrels of oil now being obtained here are worth the same, at the market price, as were the 300,000 barrels in April. But the market price was not governing the real selling price in April or at the present time. Then, when there was a flush production and no market, numerous contracts were made whereby crude oil was sold as low as 20 cents a barrel, and there were many contracts that called for less than the 40 cent market figure.

Today the same condition is true, but to the other extreme. The market price is 80 cents, and has been for the past five or six weeks. A great volume of oil is being sold daily at that figure, but where new contracts are being made they are all at a premium, which runs anywhere from 5 to 20 cents a barrel. When the field's production was around 300,000 barrels a day the average selling price per barrel was really 35 cents instead of 40, and at the present time, with half the production, the average price is really 90 cents instead of 80 cents per barrel. To that extent an investment is better today than it was six months ago.

The man with a small amount of production is an important figure today, whereas he was begging for a market six months ago. If he has 100 barrels production today he can practically name his own price for it, and in addition the purchaser will gladly lay a pipe line to his wells in order to get the oil. Six months ago he was receiving no consideration whatever and in many instances he was wondering what he was going to do to be saved. Only the big corporations that were able to store their oil and hold it for a greater price were able to weather the conditions that then existed.

Scouts and representatives of crude purchasing companies are running over each other in the field at the present time to buy whatever oil may be offered for sale, and the time has come when they are actually bidding to get it. An offer of 18 cents premium for a short-term contract was recently turned down by a company that is still storing its oil, firmly believing that crude will go to \$1.25 a barrel. The purchasing agencies are even tendering contracts for the output of wildcat wells, provided a producer is obtained. This fact is encouraging wildcatting to a point perhaps never known in this State before, and it is thereby increasing the value of investments in outlying likely-looking oil territory.

The opening of new pools or extensions of the main field is also improving investment conditions. This has been demonstrated recently in the bringing in of the

Cleveland sand pool by the Prairie Oil & Gas Co., a mile north of Oilton and nearly two miles north of former production. Investments in that locality have trebled and in some instances quadrupled in value. The Prairie itself gave \$1600 for a seven-acre oil lease a half mile east of production. Just east of Oilton, where John Markham, Jr., recently brought in the first Willie Ground allotment well, the same conditions are true, while in the south extension from the field in the Foxburg-Shamrock territory—a new territory covering a wide section—is just starting in development. Instead of investment values declining in the field, the scope is being extended.

And what is true in this vicinity is true also in the other Oklahoma fields. This is now being demonstrated in the deserved revival of the Healdton pool and in the activity in the Blackwell, Boynton, Yale-Quay and several other communities, where extensive drilling campaigns are now in progress. And in the old shallow sand districts of the State, where small producing wells are obtained, a general revival is being experienced. "The man with a 5 to 10-barrel well may now smile again," was the way an old man put it recently.

The very fact, also, that the Standard Oil Co. through its subsidiaries is buying everything in the field and in Oklahoma that it can get should likewise signify that investments here are still of the gilt-edged variety. The Carter, Prairie and Okla, all well-known Standard subsidiaries, are busy all the time, and their activity even in extreme wildcat territory indicates the value of investments perhaps better than any other one thing. Within the past eight months the Carter has risen from the possessor of no property at all in this field to be the controlling figure.

That investments in this district are really and generally on the upgrade, and by no means on the downgrade, is indicated also by some recent deals in oil field property.

The Cortez Oil Co. has just sold to the Indianola Refining Co. of Okmulgee, a five-twelfths interest in its production, amounting to 3500 barrels a day, for \$426,000. This production is from the Sandy Fox allotment, on which the Cortez company has a lease, the land-owner getting one-eighth of the oil as his royalty. That price was paid, therefore, for five-twelfths of seven-eighths of the oil.

The Pierce Oil Corporation, one of the best-known oil concerns in the United States, has just closed a deal for the Sarah Rector royalty oil, amounting now to 20,000 barrels a month, at 90 cents a barrel, or a premium of 10 cents a barrel.

The Devonian company closed a deal—and this was before the price of oil went up—turning over its 320 acres in the Yarhola leases to the Roxanna company for \$1,900,000. The production of the property sold is now about 2000 barrels of oil a day.

The Carpathia and Mid-Co companies, operating the Katie Fixico lease, south of Oilton—a property that is now making approximately 8000 barrels a day—have recently paid to her guardian the sum of \$50,000 merely as a bonus to her to sign their lease. This property is a fractional 80 acres.

The Okla company has paid \$150,000 recently for a 40-acre tract in section 6-11-14, the most southeasterly production in the Eastern Oklahoma fields, and the same company has paid \$100,000 for a tract of land in the Morris vicinity that is making 210 barrels of oil daily.

One of the biggest deals of recent occurrence, however, was that made by the Roxanna company, taking over the holdings of the Samoset, Alma and Dundee companies in the Healdton pool for the generally reported figure of \$2,000,000, while the Coline company has sold its Healdton pool properties to W. E. Hodges, general manager of the Santa Fe system, for \$1,000,000. The Coline is an independent company that had assembled its acreage at a cost of \$175 to each stockholder. The sale gave each man \$80,000 for his \$175 investment. Both these sales were made while Healdton oil

was being marketed at 30 cents a barrel, the market price now being 40 cents in that field.

In taking investment values into consideration, the life of the oil fields should be a big feature. To gain such information an investigation of the life of oil wells in the older Eastern fields of the United States was made by representatives of one of the prominent companies in the Oilton district. His report was that the wells in this field should pump anywhere from 10 to 15 years, and perhaps longer. In other words, the older wells in this field should still pump anywhere from 8 to 14 years.

C. M. SARCHET.

WILL REOPEN IRON MINES.

Chattanooga Coal & Iron Co. to Mine 12,000 Tons Monthly.

[Special Correspondence Manufacturers Record.]

Lafayette, Ga., October 25.

The iron mines at Estelle, Walker county, situated in McLemore's Cove, about six miles from here, between Pidgeon and Lookout mountains, are being put in shape for immediate resumption of operations, after lying idle since 1913. They were then operated by the Chattanooga Coal & Iron Co., whose properties, which included a coal mine at Dunlap, Tenn., and a furnace at Chattanooga, besides the Estelle mines, were taken over in the year named under a reorganization by the Chattanooga Coal & Iron Corporation, of which C. E. Buck of Chattanooga is president; H. R. Lacey of Chattanooga, general manager, and S. F. Evans, mine superintendent. During this period of activity daily shipments of 500 tons of ore were not unusual, and 400 men were employed. It is intended now to ship about 8000 tons monthly to the furnace at Chattanooga, gradually increasing the output to 12,000 tons. The operation is well equipped for immediate resumption, and little time will be necessary to clean out and shape up the entries to the ore bodies, which are drifts into the hillsides connected with a five-mile outside 36-inch main hauling road.

The closing down of this mine in 1913 is attributed to the removal of the tariff on pig-iron, which permitted the entry of foreign pig at prices with which this concern could not compete. And its resurgence under the same tariff is due to the enhanced value of pig, or \$13, from \$9, consequent on the improved demand and falling off of importations.

It is understood to be the intention of the Chattanooga Coal & Iron Corporation to engage in the manufacture of the coal-tar intermediates at Chattanooga on an extensive scale, but at the same time it is stated that nothing final has been decided upon. It is said that the corporation would raise the necessary capital by placing a bond issue on the market. The bonds already issued were bought by the present owners of the corporation and were not marketed.

It is officially asserted that tariff or no tariff, should the cessation of European hostilities cause a return to 1913 trade conditions that plans will be made so to cheapen the cost of mining, both at Estelle and Dunlap, that, taken with the saving to be effected at the furnace by means of the by-products, pig will be produced at a cost to compete in the general market. The present cost of making a ton of pig at Chattanooga is said to be about \$12. Whether the Corporation can effect these economies without affecting what has come to be regarded as the American standard of wages will be watched with interest.

FRANCIS J. KELLY.

Two Additional Steamships Ordered.

The Maryland Steel Co., Sparrows Point, Md., has added two more important contracts to its orders for steamships. These latest contracts are from the Bull Insular Steamship Co., affiliated with the A. H. Bull Steamship Co., from whom the Sparrows Point corporation has received three similar contracts since January 1. The two vessels mentioned will each have a cargo capacity of 4700 tons, each being 338 feet long, with 46½-foot beam and 26½-foot depth of hold. Eleven ships have been contracted for this year by the Maryland Steel Co., one having been delivered and two more having been launched.

Building Up a City by Developing the Country

HOW A LIVE FLORIDA COMMERCIAL ORGANIZATION COMBINES COMMERCE WITH AGRICULTURE AS THE BASIS FOR CIVIC PROGRESS.

By B. L. HAMNER, Secretary Board of Trade, Tampa, Fla.

[The possibilities, almost limitless in extent, of drainage, to reclaim wet lands, the building of improved highways and other activities of the Tampa Board of Trade show what can be done by a live organization. Every member of every commercial organization in the South should ask whether his organization is doing this kind of effective work, and if not, why not?—Editor Manufacturers Record.]

In building a house it is universal to begin with the foundation, and thereupon is reared the superstructure, but in building a city sometimes, in fact quite often, the foundation is neglected.

It is quite axiomatic that no city can be greater than its surroundings or back-country, but only too frequently do cities fail to either grasp the full import of this, or, appreciating its import, fail to recognize any opportunity or obligation with respect to surrounding conditions.

Chambers of commerce, boards of trade, civic and improvement societies exist throughout the land, and their very names circumscribe the limits of their activity.

When, therefore, one is discovered in a city of commercial importance that combines agriculture with commerce, trade and civic matters, and its activities are not mere preachments upon diversification, nor advice to farmers, but consist of deeds and accomplishments, it is worthy of note.

Particularly is this true with respect to the activities of the Tampa Board of Trade in the peninsular State of Florida, and whether the magnitude of the enterprise under foot, the bigness of the men or the unusualness of such activities on the part of trade bodies is the predominant factor is a mooted question.

Prior to last March this trade body was much the same as other trade bodies, proud of the fact that Tampa was the largest clear Havana cigar manufacturing city in the world, proud of her harbor and water-borne commerce and the fact that she ranked near eighth place in point of customs revenue in the United States, and in the fact that they handled through their port 50 per cent. of the world's phosphate shipments, mined and produced in the immediate vicinity. These statistics, together with the usual claims of cities, were her stock in trade.

At this time there came the annual election of officers and governors, and there was elected to the presidency of the board a young man, D. C. Gillett, whose interests were not alone connected with lumber and transportation, but with agriculture, being one of the proprietors of the largest citrus nursery in the world.

Immediately upon election a complete reorganization took place, the membership jumped from about 250 to nearly 800, the activities of the board were departmentized and an agricultural bureau established and by appointment J. A. Griffin, cashier of one of the largest national banks in the city and a banker-farmer, was placed at the head of it.

Agricultural activities began at once, not with the blare of trumpet and with the issuance of literature to farmers upon the subject of farming, but with a careful survey of the field, for the exclusive use of the board in the guidance of its activities.

About Plant City, Seffner, Dover, Crystal Springs, Dade City and other towns in the territory tributary to Tampa there was noted vast areas of saw-grass ponds, marshes and lands subject to overflow in the summer or rainy season, with their accumulation of decayed vegetation of centuries, which if drained would be farm land of the highest type, and especially adapted to broad acre farming and livestock production.

In 1913 the Legislature of Florida, recognizing the importance of drainage, passed a drainage law similar to the drainage laws of Missouri, which permitted either the owners of the majority of land in any given territory, or the majority of the owners, to petition the Circuit Court and the court would declare them a drainage district duly incorporated, and from among their number they could elect three supervisors and to this

corporation was given the power to tax, to bond, and to carry out drainage plans.

With vast areas about requiring drainage, with adequate laws providing a method of drainage, and knowing that an agricultural back-country with prosperous farmers upon it would bring an ever-increasing volume of business to her wholesalers and jobbers and bankers, one course of activity was determined upon.

The secretary of the board was instructed to go into these localities, explain the laws and benefits of drainage, and to use every means to create an interest in the subject. This was done, but here the interest did not cease. When the interest was aroused and the desire for drainage created, the secretary mapped out various districts, examined the county records for ownership, prepared the petitions in due form, and assured each community that Tampa without cost or charge was prepared to see them through all of the preliminaries. So well has this work been done that the question of drainage and good roads, which work will be mentioned later, are in the minds of all in South Florida, the great questions of the age and of the hour.

The first drainage district undertaken to be organized was one to the north and east of Plant City, a trucking and winter strawberry center, 21 miles east of Tampa, known as the Plant City Drainage District, comprising some 30,000 acres.

Next was the drainage project north of the little village of Seffner, 13 miles east of Tampa, which district is known as the Fertile Valley Drainage District, comprising some 28,000 acres.

Next in order was the district north of Thonotosassa and extending along the valley of the Hillsborough River to Crystal Springs, known as the Two Rivers Drainage District, comprising approximately 100,000 acres.

Following this was the Dade City Drainage District, comprising 34,000 acres.

The last and largest project was the drainage project in the Withlacoochee River Valley, comprising 360,000 acres.

In the arid West the problem is to secure water; here the problem is to rescue from inundation. In the West a plan to reclaim 20,000 acres is heralded far, yet in the South these plans of rescuing over 500,000 acres are being carried along quietly and attracting little publicity outside of Florida as possible. The reason of this is that these people feel that too many people of the North already misunderstand Florida conditions, and consider the State one vast swamp, and they fear lest such development enterprises might further give misapprehension as to the State. This work is no part of the Everglades reclamation project, and is 200 miles therefrom, and that all Florida is not a swamp, these people point with great emphasis to the fact that last season 8,000,000 boxes of oranges and grapefruit, 6000 carloads of tomatoes and 20,000 carloads of winter vegetables were shipped out of the State; that the corn production was worth \$10,000,000, cotton \$6,000,000, hay \$1,000,000, oats \$1,000,000, potatoes \$3,000,000, tobacco \$1,000,000, and that her cattle are valued at over \$30,000,000.

Mr. Hiram McElroy, the Tampa engineer who has prepared all the preliminary maps of these districts, and in charge of laying out the plans of reclamation for those projects already under way, states that \$5 an acre is the outside estimate on the cost of any of these projects, and that those upon which bids have been received run considerably less.

In speaking of the drainage of these low lands, Mr.

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C. F. Elliott, chief drainage engineer of the State of Florida, says:

"So long as the soil remains the principal source of wealth, and so long as so much of the best and richest of the soil remains covered or partly covered with water, so long will drainage be one of the greatest problems of the age, the solving of which will mean as much or more to the Commonwealth than the solving of almost any other one problem. This is a great general problem which the National Government has recognized, and with which, through its faithful employees, it has been

drainage is made effective, these same lands will constitute our most productive soil.

"Every section of the State can be greatly benefited by drainage, and wherever the torch of progress lights the way to drainage there will certainly follow increased development and increased prosperity. Drainage is becoming one of the fixed policies of this State, just as has the improvement of its public highways.

"Drainage is one of the great developing factors of the age. It is the one which has been preserved more especially to the people of this generation. To former

18,000,000 acres of our best land would be made ready for the farmer and stock raiser; 18,000,000 acres of land now of questionable value would be reclaimed and would represent a real value of many millions of dollars. Thousands of good settlers would find homes on these reclaimed lands, and millions of dollars would soon be represented in the improved farms. Drainage would add beauty to the sections now known as out wet marsh, and overflowed lands. Drainage would add to our already healthful climate by giving us in some instances a drier atmosphere, and also in ridding the State of millions of mosquitoes.

"When our wet and overflowed lands are reclaimed, which can be done by some system of drainage, Florida will have more acres of good, tillable land than any other State in the Union, except Texas."

That these drained lands are productive beyond ordinary understanding can be appreciated from the crops produced along the Ocklawaha River, where 150 bushels of corn have been and are being produced without fertilizer, where once there was but a vast expanse of water and marsh.

The good-roads work of this trade body is not second in importance to its drainage work.

The Dixie Highway, planned to run from Chicago to Miami, Fla., by its original promoters did not contemplate going through the central part of Florida, but to Jacksonville on to the extreme northeastern corner of the State and thence down the East Coast. An association known as the Central Florida Highway Association was formed, and Tampa's trade body furnished the president, Mr. T. Ed. Bryan, a wholesale grocer and its secretary, Mr. L. P. Dickie, the assistant secretary of the Tampa Board of Trade. Delegates from all central Florida went to the meeting of the Dixie Highway Commission in Chattanooga and stayed until they had a promise of one branch of the Dixie Highway through central Florida, if pledges were secured insuring the building of the highway.

In 60 days these Tampa hustlers not only secured the pledges insuring the paving of this highway, but many other State highways, and since the formation of that association there have been over \$5,000,000 in county bond issues for good roads voted and carried and being spent, and at least \$5,000,000 more are contemplated and being voted on at this time.

These Tampa men got behind the good-roads movement, not with the idea of their own comfort or convenience for automobiling, but because good roads would aid the farmers already here and bring more, and the development of the gateways and the back-country is their aim and purpose, and to accomplish these things no task is too great.

In February these men will hold a midwinter fair in Tampa for all South Florida, and every member of this organization is determined that it shall outshine any other effort ever contemplated to show the products of this semi-tropical country. This, too, is but a means of getting in closer touch with the farmers, and a means of bringing other farmers to South Florida.

The cattle industry is not being overlooked, and plans are being completed for the holding of a convention of cattlemen from all over Florida in Tampa in February, to which convention will be brought Eastern and Western packers and cattlemen from all over the country, and at this time active aid is going to be rendered the cattlemen in the matter of tick eradication and the building of dipping vats and in the growing of forage.

In all of its activities this trade body is wide-awake to agricultural possibilities; its literature is devoted principally to the territory outside of the city, and so we say that this trade body is an exception and its example worthy of emulation.

The Cotton Movement.

In his report of October 22 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during the 83 days of the present season was 3,014,588 bales, an increase over the same period last year of 928,237 bales. The exports were 1,135,467 bales, an increase over last year of 762,537 bales. The takings were, by Northern spinners, 374,378 bales, an increase of 557 bales; by Southern spinners, 658,222, an increase of 226,030 bales.



SAMPLE OF OCKLAWAHFA FARMS BEFORE DRAINAGE OPERATIONS WERE STARTED.

struggling. The element which has laid hold of so large a portion of our most fertile soil will not surrender it at a word from science. It is going to take a long campaign of concerted action by engineers, statesmen and financiers, supported by the general public, to rout the enemy.

"In this State we should have the subject more at heart than almost anywhere else, because so much of our land is subject to overflow and can be reclaimed by drainage. Ten years ago drainage was only a theory to the citizens of the State. Today it is a fact—a fact at-

generations has fallen the task of exploiting forests, developing our mines and building our railroads, but to the present generations is reserved the privilege of rescuing from inundation and bringing into usefulness a part of our domain which will become through drainage a valuable and inexhaustible resource but which without drainage would be condemned to forever remain a useless waste, a rookery of insects and reptiles and a miasmic menace to human habitation and progress."

Hon. W. A. McRae, commissioner of agriculture of the State of Florida, says: "Florida has 37,000,000



CORN CROP, 150 BUSHELS TO THE ACRE, GROWN WITHOUT FERTILIZER, ON LANDS OF OCKLAWAHFA FARMS, FLORIDA, AFTER DRAINAGE.

tested by more than 400 miles of drainage canals constructed in the past five years, and more than 4,000,000 acres of land now in process of reclamation by drainage, representing a money value of \$100,000,000, which, without drainage, would be absolutely valueless.

"Ten years ago vast portions of our State were considered as worthless marshes. Today, on account of their susceptibility to economic drainage, these marshes, river hammocks, marl prairies and muck beds are recognized as comprising the most valuable undeveloped resource which the State possesses. Ten years ago these inundated lands could be bought anywhere in the State for 50 cents an acre. Today it is recognized that when

acres of land. Florida has more than 18,000,000 acres of wet and overflowed land that cannot be used for agricultural purposes without drainage and reclamation. The greater per cent. of the wet and overflowed land can be drained by large ditches and at small cost per acre. The wet and overflowed land in most of the counties would, if drained, be the best land in those counties.

"Florida has more wet and overflowed lands to be drained than any State in the Union. Florida's wet and overflowed lands can be reclaimed at as small or even smaller cost per acre than the same class of land in any other State. Through drainage and reclamation

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Artificial Ice: Method of Manufacture and Theory of Refrigeration

By ROBERT P. KEHOE, New York.

The popular idea of the process by which artificial ice is produced is vaguely associated with the use of chemicals, the chief of which is ammonia. It is generally known that ammonia is used in ice factories, and this, coupled with the slight but unusual odor from the average block of manufactured ice, gives rise to the belief that it actually contains ammonia. Nothing could be more incorrect, because ammonia never comes in contact with the product.

In the majority of ice plants the blocks of ice are made in galvanized-steel cans. The water used is sub-

The presumption that ice plants make enormous profits and that artificial ice is sold at an exorbitant price in comparison with the cost of manufacture is also an error. When natural ice is plentiful it can be delivered in Northern sections at a much lower cost than the total cost of production of artificial ice. As there is often a good supply of natural ice, this condition regulates the prevailing prices. Such prices may really be too low for many plants to allow them a fair profit. The larger factories are better able to sell at low prices if they are well operated. There are, how-



ICE STORAGE ROOM

jected to an elaborate process of boiling, distilling and filtering. The waste exhaust steam from the steam engine is utilized for the purpose. This steam passes from the engine to the distilling apparatus, where it is thoroughly cleansed of all impurities and any oil which it may pick up in doing its work in the engine cylinder. More important still is the removal of air, which would form in bubbles when the water is frozen and make the ice white or opaque. As everyone knows, all artificial ice for general use is transparent, and the public would not buy it if it were otherwise. Sometimes oil still remains if the distillation is not thorough, and a slight oily odor may be detected.

The removal of the air and elimination of all vegetable matter and solids in suspension, together with the occasional presence of oil, gives the ice a peculiar flat taste and a slight unusual odor. The ammonia is enclosed in pipes which are capable of withstanding a pressure of 1000 pounds to the square inch, remaining absolutely tight under this pressure. These pipes are submerged in a tank of strong brine solution, and the steel ice forms are set in this tank. Ammonia could only find its way into the ice by escaping from the pipes, passing through the brine solution and by some extraordinary means getting into the ice cans.

Another prejudice is the idea that natural ice has more refrigerating effect per pound than the artificial product. Users often insist that such is the case, although it is contrary to natural laws. Ice is frozen water, and its capacity to cool or refrigerate depends entirely on the rapidity with which it melts. In melting it absorbs heat from surrounding objects. The faster it melts, the quicker it will cool. Herein lies the reason for the fallacy that natural ice refrigerates more rapidly.

The latter always has a rough uneven surface, and contains more or less air. Artificial ice is solid, and each cake has a perfectly even surface. Consequently, it presents less surface which can absorb heat. Surface is the sole condition which affects the rate of cooling. Break up the artificial ice to increase the exposed surface, and it will melt just as fast and cool just as quickly as the natural ice.

expensive apparatus and buildings, repairs, employing labor in cool weather when the plant is shut down and other similar expenses will increase the total cost to \$1.25 in a large plant and to \$1.50, \$1.75 or \$2 in smaller factories.

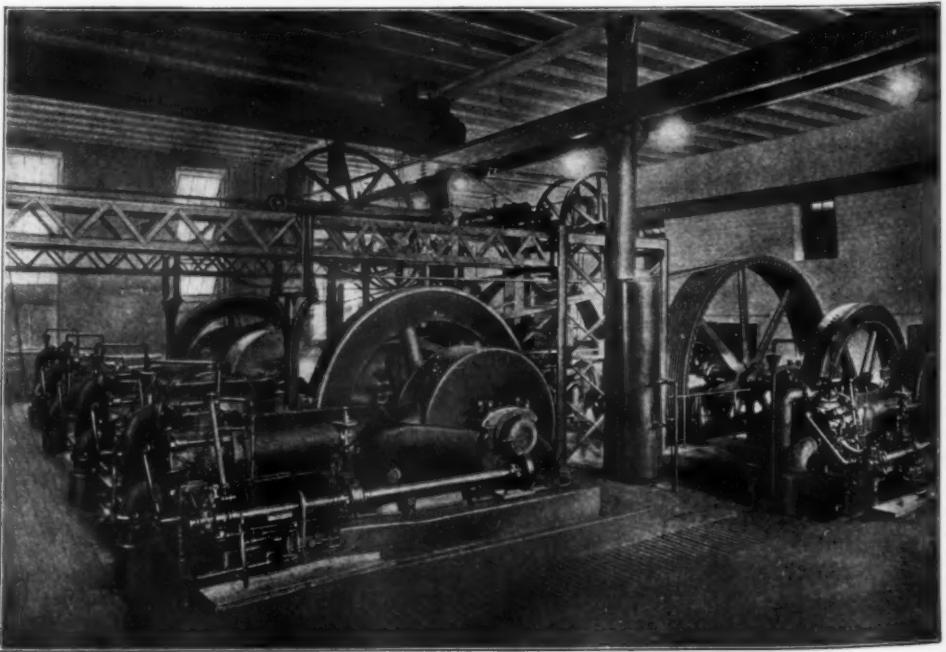
Ice is sold at docks and delivery platforms for \$1.25, \$2, \$2.50 or more in Northern States, and from \$2 to \$4 per ton in Southern States. The average wholesale price in large States would be from \$2 to \$2.50 per ton. Delivery expense in crowded sections may be only \$1.50 per ton, including stable expenses, drivers, feed, depreciation and mottage. Again, it may be \$3 to \$4 in a suburb where the houses are 100 to 300 feet apart and the delivery man must walk some distance in each case with a piece of ice worth about 10 or 20 cents. Sometimes the ice is not wanted, and the cake must be brought back to the wagon, which treatment does not tend to increase the size of the cake.

Buying ice for \$2 a ton and delivering at a cost of \$3 makes a total of \$5. If the retail price is 40 cents per hundredweight, or \$8 per ton, this leaves a profit of \$3. Assume that a wagon may deliver three or four tons on an ordinary day in small pieces, which means a profit of \$9 to \$12 for the wagon. Now consider that the ice season is about three months long, and during the balance of the year the demand falls off rapidly. The ice man must keep on doing business all this time to maintain his trade, but the profit is little or nothing. His business has to produce practically all the profit for a whole year in the summer months.

When these things are considered it will be conceded that the ice-plant owner and ice-delivery man are not such "thieves and robbers" as many people believe them to be. The business is more precarious than many others, and when the opportunity presents itself, higher prices are maintained to earn enough profit to carry over the business during bad seasons.

Statements are often made that ice may be manufactured for 50 cents, 75 cents or \$1 per ton, but these are misleading, and only include part of the cost. A plant of 100 tons daily output will cost complete approximately \$100,000. If money is borrowed for the purpose, the interest will be \$6000 annually at 6 per cent. At least 6 per cent. more should be calculated for depreciation, as the plant may have to be completely rebuilt in 15 or 20 years. This makes a total of \$12,000 for interest and depreciation. The total yearly output of a 100-ton plant will average about 18,000 tons, considering the cooler months, when very little ice is sold. The expense per ton for the two items of depreciation and interest alone will therefore be 66 cents, and we must add fuel, labor, oil, repairs, taxes, water, light, etc. The absurdity of saying the cost of making ice does not exceed 50 to 75 cents per ton is apparent.

In retailing ice it is, of course, much less expensive to deliver to butchers, saloons, hotels and other customers who require large quantities. The price is less to such trade; in fact, a sliding scale of prices usually



ENGINE-ROOM, OIL ENGINE DRIVEN RAW WATER PLANT.

exists and the variation corresponds with the amount delivered.

In Greater New York it is claimed that the daily consumption of ice reaches approximately 25,000 tons in summer. Nearly 10,000 tons is manufactured by the ice plants, and the balance comes from natural sources. The smallest factory in the entire district produces at least 50 tons every 24 hours, and the largest about 900 tons. There is only one other plant in existence which equals the latter in capacity, and this is located in St. Louis, Mo. The majority of these factories are operated by steam, and distilled water is frozen, as already explained.

Recently several plants have been constructed on an entirely new system. The new process usually combines the most up-to-date method of producing cheap power and the manufacture of clear transparent ice from raw or undistilled water. A system of filters properly prepares the water before freezing.

Probably the best plant of this kind with respect to product is one in Baltimore, Md. The ice manufactured is as clear as crystal and absolutely devoid of the usual odors found in artificial ice. This plant, however, is operated by steam, which is not the cheapest method of driving a plant that does not need steam for producing distilled water ice. The latest type of prime mover for this purpose and where the conditions are favorable is the crude oil engine.

Power is obtained by burning crude petroleum directly in engines designed for the purpose. No boilers are required, and the handling of coal and ashes is entirely eliminated. The oil goes from the storage tanks into the engine cylinders, where it is burned under high pressure. The combustion or explosion propels the piston and drives the machinery. Crude petroleum or fuel oil can be purchased for 3 or 4 cents per gallon, and about four gallons are necessary for making each ton of ice, which means only 12 to 16 cents per ton. The average steam-operated ice plant uses a ton of coal for each six tons of ice, and if the coal costs only \$3 per ton delivered, the price of fuel for each ton of ice is 50 cents.

The saving is considerable, but with no steam available to make distilled water, special means must be adopted to secure transparent ice. Ordinary water, even when filtered, contains a lot of air, and if frozen in the usual ice can the air forming in numberless bubbles makes the blocks of ice as white as marble. Such a product is not salable to the general trade. Butcher shops, ice-cream depots and drug stores might purchase it, but the general market demands clear ice.

The process of driving the air out of the water during freezing is rather extraordinary. A system of pipes are arranged over the ice cans, which are connected to an air blower or compressor. A tube is suspended into each can from this system of pipes, so that air under slight pressure is constantly blown through the tube in the water and keeps it in a continual state of agitation. On first thought it would appear that more air would simply add to the original amount in the water, but the violent agitation causes all the air to rise to the surface and be lost in the atmosphere. The air has a tendency to form in bubbles on the ice surface as it grows in thickness from the sides of the cans, but the air-agitating process disturbs these bubbles and they rise to the top.

The product of the new system just described is known as "raw water ice," because it is frozen from raw or untreated water. The older system is called "distilled water ice," since it is made from distilled water. It might be considered that the distilled water ice is much preferable in view of the purification and freedom from bacilli, but the raw water ice can be and is usually made from the local drinking water supply, which, of course, should overcome any idea that it may be impure. Moreover, it contains all the natural local elements of the water, and is consequently devoid of that objectionable flat taste found in the distilled water ice.

So much for the different processes of freezing. The question which may occur in the minds of those interested in the subject is how is the heat taken out of the water and where does it go. It is only by continually carrying away heat that the water is finally frozen. That is exactly what an ice-making or refrigerating plant is—a heat-carrying equipment. It merely takes the heat from one place and delivers it to another.

The chief reason for using ammonia is its high

"latent" heat. When we reduce the temperature of water one degree on the Fahrenheit scale, we remove "sensible heat," or the heat which changes the temperature. When the water is reduced to 32 degrees Fahr., or the temperature at which it begins to freeze, we begin to remove the latent heat or the heat necessary to change the state of matter. It requires the removal of what is known as one heat unit to reduce the temperature of one pound of water one degree, but 144 heat units must be taken out of one pound of water at 32 degrees Fahr. to change it into ice at 32 degrees Fahr.

Ammonia is a gas at the normal temperature. In fact, it will boil at 29 degrees below zero in the atmosphere. Under high pressure, however, it does not boil, except at a much higher temperature. The latent heat of ammonia, that is, the heat it will absorb when changing from liquid to gas, is about 550 units. Compare this with ice, which only absorbs 144 units in changing to water. Different liquids, solids or gases, have a different latent heat.

Because ammonia has a high latent heat it can be used to advantage by liquefying it and then changing it back into a gas by absorbing a large amount of heat from its surroundings. It is like a sponge that absorbs water in one place which can be pressed out elsewhere. The latent heat is its capacity to absorb; in other words, it is a comparatively large sponge.

The ordinary refrigerating apparatus consists of a pump or compressor, a condensing or liquefying coil and the refrigerator or ice tank. The compressor takes the ammonia gas and compresses it to a pressure at which it can be turned into a liquid. The condenser coil is arranged to have water continually flowing over it. This water carries away the heat. A large quantity is necessary, and river or well water is often used. Under the high pressure (from 150 to 200 pounds per square inch) the ammonia becomes a liquid, due to the cooling action of the water which flows over the outside of the coils. The ammonia liquid then flows to the ice tank coils. Here it passes through a very small opening, and the pressure on the other side is only 15 or 20 pounds. It therefore drops from about 200 pounds to 15 pounds pressure. Under the lower pressure ammonia will become a gas at zero Fahr. In consequence it immediately begins to boil and absorb its latent heat from the surroundings, as previously described. While boiling under the lower pressure the temperature inside the pipes becomes zero. This temperature is low enough to make the heat pass rapidly from the water in the cans, through the brine solution and into the ammonia.

As fast as the ammonia turns again into gas it returns to the pump or a compressor to be recompressed and follow the same process already described. Thus it makes a continual cycle, and is never supposed to escape. Of course, a small quantity does leak out at the pump, but rarely does it find its way out of the system at any other point except when making repairs. It is simply a medium used for convenience in conveying heat, and is not supposed to leave the system any more than steam should be allowed to escape from a radiator in a heating system.

The same method of cooling is used in cold-storage houses, fur vaults, breweries, drinking water cooling plants, hospitals, hotels, skating rinks, or in any other application of the art of refrigeration. The equipment will vary to suit local requirements, but the principle remains the same.

In the city of Washington and a few other places there are several of what is known as plate-ice plants. This is a special ice-making system which freezes large cakes of ice weighing from three to five tons each. These cakes are frozen from the sides of flat vertical ammonia coils submerged in water. The ice grows out in one direction only, and it requires a whole week to freeze one large cake, which is cut up into commercial blocks after harvesting. Ice can be made in this manner from undistilled water and be very clear and transparent. The cost of such plants is very great, and while the system has been successfully used for many years, for this reason they have never been very popular. Now that the can raw water system referred to herein has been successfully introduced, costly plate plants will probably never be installed again.

Artificial ice should always have preference over natural ice for private use. Its purity is unquestionable, while the natural product may contain dirt and bacteria in quantity. The amount of manufactured ice grows

every year, and the supply of natural ice has no doubt diminished in the last 10 or 15 years. These conditions indicate a growing realization on the part of the public of the superior qualities offered by manufactured ice.

LARGE WOODWORKING PLANT TO OPERATE AT ASHEVILLE.

Graham County Lumber Co. to Add Ready-Made House Construction to Its Present Activities.

Asheville, N. C., October 24—[Special].—An announcement was recently made that the Graham County Lumber Co. has purchased the property formerly used by the American Furniture Manufacturing Co. on the banks of the French Broad River, and active operations have already started. In addition to taking over this property for the manufacture of various building equipment, furniture and dimension dwelling-houses, the company is preparing to purchase nearby land for its use in the construction of additions to the plant, the preparation of lumber yards and the provision of storage facilities.

The Graham County Lumber Co. owns some of the largest and most valuable timber tracts in Western North Carolina, and from these holdings will be supplied the lumber which is to be used at Asheville. A tract of more than 100,000 acres of valuable timber lands in Graham county was purchased by the company a short time ago, and it recently has acquired large timber areas in Macon, Swain and Cherokee counties, indicating the extent of the Graham county development, bonds in the sum of \$50,000 recently have been issued for the construction of a railroad from Andrews into the forest lands of the concern for the marketing of the timber on the immense boundaries. The work on the railroad will be started in the immediate future, and its completion will greatly facilitate the hauling of the lumber from the forests to the company's mills at Andrews and the placing of its products at its plants at Judson and other points in the western counties of North Carolina.

The plant of the American Furniture Manufacturing Co. will be used to manufacture furniture for the markets of all Southern States. In addition, one of the important phases of the work will be the manufacture of dimension stocks for knock-down houses.

A large grading station will also be established on the land of the company, to which will be shipped the dressed lumber from the plants at other points in the western part of the State. The grading station was necessitated by the recent development of the business to such an extent that a plant of this kind was demanded. The factories at Andrews and Judson have been enlarged greatly during the past few months, but the additional facilities have not enabled the management of the concern to fill the many orders which it has received. In fact, the demand has been so great during the past few months that all of the company's traveling salesmen have been withdrawn from the road. A large quantity of new machinery has just been bought for installation.

The Graham County Lumber Co. is one of the strongest companies in the South, having ample financial backing and operating on a large scale. It is owned by American and English capitalists, and its purchase of lands at Asheville will result in the expenditure of a great many thousands of dollars. Large sums will be spent in the purchase of additional land near those which are owned by the American Furniture Manufacturing Co. at the present time. The erection of new buildings will call for the expenditure of additional thousands of dollars, and a large sum will be spent for the purchase and installation of the new and modern machinery which is to be added to the plant. "Made in Asheville" will be on every piece of furniture leaving the plant, and the manufacture of dimension stock for houses at this point will mean much to Asheville in an advertising way.

This deal, by which Asheville gets another large industry, is the result of the activities of the industrial committee of the Board of Trade, of which Mr. Frank M. Weaver is chairman. Mr. Weaver is also receiver of the American Furniture Manufacturing Co., having been for some time in charge of the affairs of that company.

Soil Redemption by Individuals the Greatest Constructive Work of Our Time

E. E. MILLER, Cleveland, Tenn.

As a people we have just begun to appreciate the necessity of conserving our natural resources and to appreciate the folly of many of our old methods of waste and destruction. We are just beginning, too, to realize what mastery men have acquired over the forces of nature. In many ways the world is literally being remade. The rivers are being harnessed to drive the wheels of the factory or to swing the farmer's churn. Barren mountains are being clothed with forests and great irrigation works are making the desert to blossom as the rose. The Panama Canal realizes the dream of centuries, and men now living will see a greater dream realized by the taming and harnessing of the now uncurbed and destructive Mississippi.

Yet the greatest constructive and redemptive work of our time lies not in any of these things, but in a work that must be wrought out by the individual efforts of thousands and tens of thousands of men, each toiling at his own little task, and with no great immediate results to show the seeker for startling news. This work is the making of new fields out of old ones, the redemption of our "worn-out" lands, the increase to a respectable figure of the average acre yields of our staple crops.

It is the greatest of all constructive tasks, both because of the number of people who must help perform it and the total amount of time and labor they must give to it and because of its importance to men as individuals and to the nation as a whole.

Enduring prosperity for the American farmer can come only through the enrichment of our farming lands. With countless acres of cultivated lands in all sections of the country too poor to produce a profit-paying crop, and with thousands of farmers working lands from which they can hope to secure no more than a meager living, no matter how hard they may work, it is easy to see why the food supply does not keep pace with the increase of population and to understand why so many well-meaning people have felt it a duty to lend their voices to the cry of "back to the land."

There are plenty of people now on the land to produce all the food and other crops Americans will consume for many years to come, and any talk of our having reached the limit of crop production is simple nonsense. There is not a single Southeastern State that is not capable of producing ten times the total crops it now produces, and that, too, with the farming done, as

it must continue to be, on the extensive American plan. Crop production must be increased chiefly and first of all by increasing the fertility of the soil. The amount of labor that can profitably be expended on an acre of land is limited by the value of the crop that can be grown, and this, in turn, is largely dependent upon the soil fertility. It would profit us little, as individuals or as a country, to increase the average acre production if this had to be done by restricting each farmer's operations to a very few acres and compelling him to spend two or three times as much labor on an acre as at present. The worn and depleted fields must be made over into new fields which can be tended with no greater outlay of time and labor and that will yet yield twice as much.

This task is an entirely possible and an eminently practicable one. It is indeed a work which must be done. It is serious to waste the forests, the coal and other natural resources, as the wise ones tell us we have been doing, but to waste the soil is exceedingly more serious. The average man, even the average farmer, has no real idea of what a gullied hillside or a sand-buried bottom means to the community in the loss of wealth, of energy, and of opportunity. Every such impoverished field is not only a loss to the present generation, but a tax laid upon the future to be paid only with much hard, profitless labor and long years of waiting. Here and there some far-seeing man—a great builder like James J. Hill, a scientist like Professor Shaler—has seen and proclaimed the fact that soil waste is the greatest waste of all, but most of the men who till the soil and most of the men who direct affairs of State have as yet failed to realize it.

The time has come, not only to realize the fact, but also to act upon it.

The work of soil reclamation is, if not easy, at least practical, and the knowledge of how to do this work is within the reach of every farmer. Nature is good to us. We can deplete the soil until it will not pay us for working it, but we can readily wear it out only by letting it wash away. Even apparently hopeless "guilty fields" may be made again to grow good crops, and there is a possibility of controlling erosion. The swamps can be drained; the hard, dry, "lifeless" soils usually need only the application of vegetable matter, and perhaps some lime and phosphorus, to make them fertile once more. All these are things the individual farmer can do.

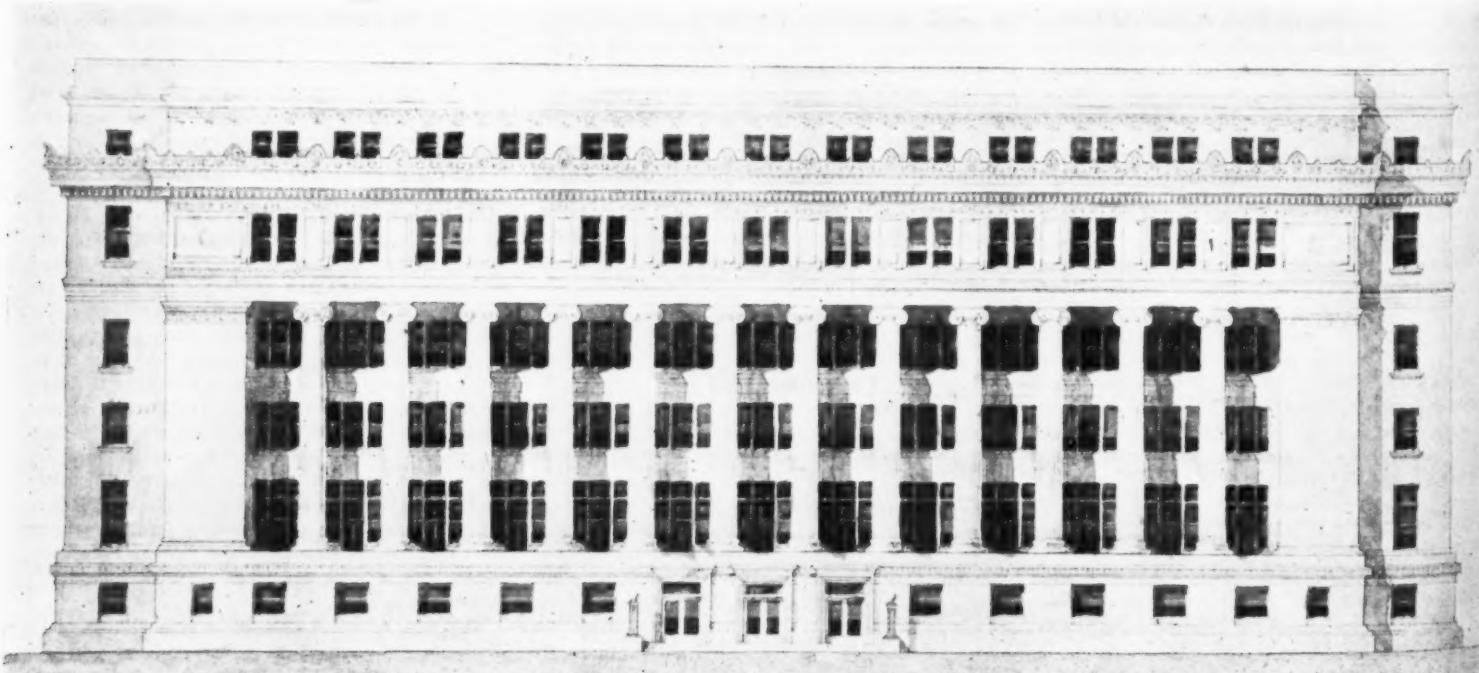
It all sounds simple and easy, and in one sense it is, but when it is remembered that the poor lands are in the hands of millions of men and that each man is free to do what he chooses, or what he can, with the land he owns, it does not look so simple.

When one thinks of what has been done in case after case with soils once thought hopelessly poor, or when he thinks of the rapid increase among thinking men of a working knowledge of the soil and its care, he is likely to grow optimistic. The fact remains, however, that countless farmers are all the time reducing the fertility of the lands they tend, and that any increase in the average acre production of the staple crops can be more than accounted for by improved methods of tillage, better seeds, and the increased use of fertilizers. As a people we are still robbing the soil instead of fattening it.

Change must come through two means. The first and greatest, of course, is the continued and continuous education of the farmers—and of all other men—in the methods and practices of soil building. The next generation of farmers should grow up understanding humus and plant foods and soil texture, the use of lime, and the place of legumes in the rotation just as well as they understand the multiplication table or the parsing of sentences. We have talked so much about teaching these things that we sometimes imagine we are doing it. The fact is, we have scarcely made a beginning.

More than education is necessary. There is work that cannot be done by the individual farmer. Drainage, irrigation, reforestation, control of erosion all present problems that must be solved by community action. There must be positive action by the State, when such is necessary, to prevent waste of the soil. It is not likely that in our country the Government will ever attempt to say how a farmer shall farm, but there are things the Government can and should do. The courts have decided that a State can regulate the clearing of forest lands owned by individuals. It can almost certainly regulate the disposition of surface waters, under certain conditions. It has a vital interest in abandoned lands and those left without protection, and can probably prevent them from being so handled as to be an injury to the community. Above all, it can through taxation, which will fall most heavily on the soil waster or the holder of idle lands, make it increasingly profitable to take care of the soil and increasingly unprofitable to destroy it or render it unproductive.

In any case, it is time for us as a people, and especially for us as farmers, to realize that soil depletion is a very real and a very serious menace to our future, and that the making of new and productive fields out of the old and unproductive ones is the greatest and most needed constructive work of our time.



EL PASO COUNTY COURT HOUSE

TROST & TROST ARCHITECTS

\$400,000 COURTHOUSE TO BE ERECTED BY THE COUNTY OF EL PASO, TEX. BIDS TO BE OPENED NOVEMBER 9.

News and Views from Our Readers

Interesting Comments on the Sugar Tariff, West India History, Etc.

A. E. KENNEDY, Monroe, La.

There is an old adage that "wise men and nations change their views, but the foolish never."

British history. From 1600 to 1760 the import duties on West India brown sugar ranged from 5 to 15 per cent. ad valorem. In 1787, under Pitt, the sugar duties were fixed at \$0.22 per 100 pounds, American gold. Sugar duties were gradually reduced until a free sugar tariff was adopted. The British idea on a free tariff on raw products was to make the United Kingdom the great manufacturing workshop of the world, and in the absence of competition of other nations was high statesmanship.

The new British tariff on sugar, effective September 22, 1915, is as follows: Sugar 100 purity, 2 cents per pound; 96 purity, 1.75 cents per pound, going down as low as 76 test. As refining sugars imported into the United States are based upon 96 test, the present American tariff is 1.34 cents, compared with 1.75 cents in England.

It is reasonable to suppose that under changed conditions since 1912, American statesmen will follow English ideas and avert "free sugar" in 1916.

Barbados, a British island 14 by 20 miles lying east of Porto Rico, contains a population of 1171 persons to the square mile, of whom 95 per cent. are English-speaking negroes. The "History of South Carolina Colony" says that "England made a grant of land near Port Royal, S. C., to Mr. West of Barbados and others on condition of 150 acre land for each slave imported from Barbados. Mr. West, bringing slaves, seed corn, cane, cottonseed, etc., settled in South Carolina and became Colonial Governor."

Some of his descendants in Louisiana grow cane with negro labor.

Governor Yager, of our Colonial Island Porto Rico, visited the "mainland" this summer, saw President Wilson, and being interviewed stated that the population was 350 persons to the square mile, and by reason of the introduction of American labor-saving machinery in cane culture, the population was too dense.

Spanish official records at Seville, Spain, show that Porto Rico was colonized as early as 1510; the hills were mined for gold, and Spanish and Portuguese slave ships brought African slaves that in physical endurance supplanted and exterminated the aboriginal natives found by Columbus.

The climate and healthfulness of our West India colony is fine, but after 400 years the soil requires diversified farming.

Under improved sanitary conditions tropical countries of the Western hemisphere are capable of supporting a very dense population.

The United States this year has shipped to Cuba 104 cane mills, with all appurtenances thereto belonging.

Just Laws, Impartially Enforced, Necessary for Prosperous Conditions.

D. L. RUSH, Biloxi, Miss.

I am a constant reader of the MANUFACTURERS RECORD, and wish to express my appreciation of your efforts for the good of the South. You are certainly making a study of the natural advantages and opportunities offered in the South, but there are some other things needed that could be reached through your paper to advantage, I think. According to my idea, the greatest thing that the South has to hold it back is one-sided laws and the advantage that people take of them. Both labor and capital are scared away for fear of being legally beaten out of their earnings. If we had fair laws to both labor and capital and the same protection for outsiders as we have for natives, then we could expect to see greater progress made in the South.

Never will this country come into its rights until our lawmakers and law officers wake up to the fact that in order to have healthy, prosperous conditions we must have just laws, impartially enforced.

"More in the Man Than There Is in the Land."

ASHLEY B. SOWELL, Secretary Board of Trade of Columbia, Columbia, Tenn.

The National Fox Hunters of America have their annual meet in Maury county, beginning November 22, and continuing throughout the week. Columbia will be headquarters. We hope that you can have a representative here. We would like to get your magazine circulated throughout our county for the help it will give in developing our many resources by developing our people, for we strongly believe "there is more in the man than there is in the land."

There are many interesting things in the history of Maury county, for it has produced great men and numerous fast horses, and is noted for the production of mules, Jersey cattle and other livestock.

However, the most important thing connected with Maury county is its large deposits of phosphate, and, as you know, the merits of phosphate are not generally known except among the scientific agriculturists and a few progressive farmers, and so far it is very little used in the arts.

When we take into consideration the deposits of phosphate in the United States, and the great demand there would be for it if the farmers knew that it is one of the principal elements for restoring soil fertility, there would be a great demand for it to reclaim worn-out and run-down farms and bring the soil back to a high state of cultivation, which is probably the surest way to reduce the high cost of living.

Phosphate will find a market later on in the arts, for the only plant in the United States now fusing phosphate rock with iron ore and making ferro-phosphorus is located in this county and is unquestionably a successful enterprise, and the development that has been made at the Rockdale furnace is conclusive proof that phosphorus can be released from the phosphate rock.

Increasing Business Activities at New Orleans.

H. A. W. HOWCOTT, Orient Co., Ltd., Inc., of New Orleans, La.

Business is good with us, the best we have enjoyed since organizing and incorporating our company, about four and one-half years ago. Most of our friends we have approached advise us that business is better or increasing with them. One steel cabinet salesman tells us he has done his best business the past two months; another one states new business is coming to him by leaps and bounds; he can't understand where it is coming from. An insurance agent has told us that this year he has done better business than for the past 14 years. Visitors and strangers state that this city appears to them to be enjoying more prosperity, activity, etc., than any other city they have visited.

We appreciate and thank you for the space you have been devoting recently to New Orleans growth and progress in docks, warehouses, railway terminals, factories, street paving, etc. We are very optimistic over New Orleans' future, and believe it is to enjoy the greatest growth in the next few years of any Southern city from the Potomac to the Rio Grande.

Reader, Go Thou and Do Likewise.

JOHN G. CARROLL, Ettricks, Va.

Please mail MANUFACTURERS RECORD to Ettricks, Va., as I have changed my residence. I would not be without the MANUFACTURERS RECORD for twice the price. I boast it to all my fellow-workmen and say, "Do you take the MANUFACTURERS RECORD?" If they say "no," I say, "Why not, boys, it is the best paper of its kind published." I cannot say too much for it. Please enter Mr. M. E. Bridger, Ettricks, Va., as a subscriber. I was telling him of the value of the MANUFACTURERS RECORD was to me, and he said, "Well, John, send in my name."

Petersburg is on a big boom. More work here than ever before. Cannot get sufficient help to keep up.

Heartily Commends the Agitation for a Brighter, Better South.

T. B. WILLIAMS, Secretary Waldo Board of Trade, Waldo, Fla.

Kindly put me in touch with the manufacturers of 100-pound jute corn bags. Several of our leading farmers are in the market for them here, but are unable to locate the manufacturers.

The South has never had a bigger asset than the MANUFACTURERS RECORD. Your editorials and suggestions for developing the South's industries are unparalleled, and to my mind your continuous optimistic agitation has and is no doubt rendering a service that no other periodical is doing to shut the mouth of the croaking pessimist, and to awaken a new revival for better business and a greater South. Conditions are generally better, and improving daily, with cotton soaring skyward, naval stores and phosphate more active, lumber markets looking up, merchants buying more goods, new industries being talked of, and last, but not least, the people have fully awakened to the fact that we must have good roads. The different trade bodies are keenly alive to this promotion, and are agitating and getting down to business by working harmoniously to this end.

Keep up this much-needed optimistic agitation for a brighter and better South.

Wants to Interest Capitalists in a Cheese Factory.

W. M. MENTZ, Sinks Grove, W. Va.

I should like to correspond with a corporation or individuals who are thoroughly familiar with the manufacture and sale of cream cheese and by-products, and have the capital to build and equip a modern cheese factory at Sinks Grove, Monroe county, W. Va., in one of the best bluegrass sections of the country.

Deposit of Strontium in Texas Awaiting Development.

E. D. JUNKIN, Austin, Tex.

The writer knows of a fine deposit of strontium available in this part of Texas. I do not know where to seek for people who would be interested in developing it. I thought possibly you might cite me or refer me to someone with whom I might correspond.

Gets Valuable Business Through Columns of Manufacturers Record.

J. R. CASE, Manager of the Arkansas Lime Co., Ruddels, Ark.

I read the MANUFACTURERS RECORD with the greatest interest, and the business that we gather from its columns amounts to hundreds of dollars to our company annually. I consider it the best manufacturers' magazine published in the South.

Interested in Peanut Oil Manufacture.

C. M. JERNIGAN, Alabama Oil & Guano Co., Inc., Opelika, Ala.

I am interested in the manufacture of peanut oil, and would thank you to give me the names of some manufacturers of machinery of this kind.

The Kentucky Wagon Manufacturing Co., Louisville, Ky., advises the MANUFACTURERS RECORD that it has received a contract to build about \$80,000 worth of wagons for the United States Government. These vehicles are for war purposes, and are to be shipped to the Depot Quartermaster at Jeffersonville, Ind.

Better Conditions in Iron, Steel and Coke Bring Busy Days to Birmingham

[Special Correspondence Manufacturers Record.]

Birmingham, Ala., October 23.

After an absence of several months from the Birmingham district I have noted, in making a tour of the district, some marked improvements in industrial lines and a general improved tone in business of all kinds. At the time of leaving Birmingham a few months ago the pig-iron market was \$9.50 to \$9.75 per ton, whereas today it has steadily climbed until it has reached \$13 per ton for spot or balance of this year's delivery, with \$13.50 per ton being asked and received for business extending over the first half of 1916. Many of the large interests have withdrawn from the market, only taking care of their old line customers as they seek tonnage. It now looks as if the prophets who predicted \$15 iron by Christmas of this year will see a fulfillment of their prophecy.

The manager of one of the largest producing companies of the district reports that thus far this month his company has sold 65,000 tons for shipment to points on the Pacific coast on the west, to the Canadian border on the east, and with a good tonnage for export to Italy as well. An official of the Tennessee company was interviewed with reference to the position of his company in regard to rail tonnage. He replied that sufficient tonnage had been put on the books to comfortably take care of their plant for some time to come. Within the past two weeks the pig-iron market has improved so materially that all the companies in the district have adopted the policy of pushing the output. A very short while ago the Sloss-Sheffield Steel & Iron Co. only had two furnace stacks in blast. Today it has in four stacks, and is rushing repairs to the fifth preparatory to blowing in by the first of next month. Even the old beehive coke ovens of the district that have been idle for years are being put in repair for commission, notwithstanding the tremendous output of the by-product ovens of the district. This, of course, means that within a few more weeks relief will be had for the coal market, which has suffered severely the past several months.

After having learned of the improved conditions in the iron and steel markets I decided to visit the manufacturing plants to ascertain just how much of a reflection of improved conditions there has been in their lines of work. I found at one of the larger foundry and machine shops that for the past five months the plant has been running double shift in the production of acid and sugar-house machinery, there already having been 150 to 200 carloads of this machinery shipped to New York and Brooklyn and to the Island of Cuba. When questioned as to the probable size of orders being filled for Cuba, the manager replied that some 200 carloads would be shipped. This is not the only plant in the South that is running double shift in turning out machinery of this kind, and has been under such operation for more than a year past.

A visit to another plant, where there is manufactured corliss and slide-valve engines and a general line of castings (including some munitions of war), I found conditions satisfactory, whereas in this same shop four months ago there was a decided lull, with the officials complaining of severely dull times.

Worthy of especial mention I visited what proved to be the most modern and up-to-date pipe plant in the United States operating double shift on water pipe. Only a few years ago this plant had an output of 80 tons of pipe per day. Under present management it has reached its present state of efficiency, with an output of from 350 to 400 tons of pipe each 24 hours, and is the only pipe plant thus far which has backed its judgment in the manufacture of 16-foot pipe. Just recently the company spent \$75,000 in rearranging its pits and ovens for the manufacture of this pipe, has installed a gas-producing plant costing \$100,000 for the drying of its cores and molds, utilizing the coke screenings for the firing of its six boilers. It has erected a Y. M. C. A. for the comfort of its workmen, with bath, cafe, lounging-rooms, moving pictures, etc.; also a medical dispensary in charge of a physician, surgeon and two trained nurses. This company has not spared time

and ability to effect an economical development which has today put them in line to profitably compete with any industrial plant of its kind in existence in this country, and it is essentially a Southern institution, independent in character, demonstrating what the possibilities are in the Birmingham district for a small industry that is based on the right business principles, backed by a management that appreciates what progressiveness and aggressiveness mean—not losing sight of the fact that in order to raise a plant to a high standard much consideration must be given to the comfort and welfare of its employees in every branch of the business. During the depressed conditions following the declaration of war in Europe, when the order of the day among industrial concerns seemed to be retrenchment and short time, this concern launched into extended improvements and put its plant on double time.

With the coming to the Birmingham district of the by-product of oven there has been developed a business of large proportions—that of the manufacture of benzol. The Woodward Iron Co. was the first concern in the district to launch out in this direction, erecting a plant with a capacity of 2000 gallons per day. Since the declaration of war and the stopping of imports there has been a tremendous demand for this product. With the installation of the second battery of by-product ovens by the Woodward Iron Co. there has been erected an additional plant by the Edison Company with a capacity of 13,000 gallons per day. The Tennessee Coal, Iron & Railroad Co. has completed and has in operation at its Fairfield by-product coke plant a benzol plant with capacity of 13,000 gallons per day. These improvements represent to the district institutions, that total in cost from \$2,000,000 to \$2,500,000, and supply work for hundreds of men, and accentuate the ultimate possibilities of the Birmingham district in the development of the iron and coal industries.

Another impressive feature of the city's progress is the absence of some of the old landmarks on prominent corners. They have given way to many substantial three and four-story buildings. On the old O'Brien Opera-house corner, on the northwest corner of First avenue and 19th street, a large five-story business block is being erected. The old Florence Hotel building, on the northwest corner of Second avenue and 19th street, will be torn down January 1 to give way to the erection of a seven-story modern fireproof building to be occupied by the mercantile house of Louis Saks. When questioned as to the real estate business, the president of one of the largest real estate firms in the city said that there has been an improvement, and not only substantial parties are seeking investments, but those who have bought on time are meeting their obligations satisfactorily. He stated that by reason of the district's acquiring a larger percentage of skilled labor there is an increasing demand for better living facilities, and to that end investigations were being made into the proposition of building attractive flats on the unit system, which will afford the workingman and his family neat and attractive quarters on a more reasonable basis. The system of flats that are so popular in Baltimore and Philadelphia are being looked into seriously with the view to having some popular contractor from these sections visit Birmingham for the purpose of making estimates. It will be the policy to erect solid blocks of these neat flats, with all modern conveniences, so that a family will be able to live in an attractive neighborhood at a rental ranging from \$10 to \$18 per month. It has also been forcibly brought to the attention of the Chamber of Commerce that the price of foodstuff is somewhat higher in Birmingham than obtains in certain other large Southern cities, and there is a movement on foot to systematically work out a plan whereby these conditions will be improved upon.

The city has not spared expense the past several months in varied municipal improvements. Chief among the substantial things that have been accomplished was the building of viaducts across the railroad tracks from 26th to 32d streets on First avenue at a

cost of \$200,000, a distance of half a mile, thus eliminating future heavy death tolls. This section in the past has been the scene of quite a few fatal accidents. Plans have already been drawn for connecting the downtown district with the southside by viaduct, to cost approximately \$150,000.

The citizens of Birmingham have been aroused to the duty of civic pride, and strenuous efforts are being put forth in behalf of a large auditorium for the city, establishment of recreation parks, a general pull-together for small diversified industries, etc. In this last-named respect it has also been forcibly brought to the attention of the Chamber of Commerce that the most feasible plan for the attraction of small industries is cheap site facilities, cheap power and ample banking facilities; a spirit of co-operation and helpfulness on the part of citizens—that is, encouraging a newcomer by lending him moral and financial support at a time that it is needed, rather than lending "lung power" in meetings of invitation and extending only "sympathy" in time of need.

Y. A. DYER

FOR EXPORTING SOUTHERN LUMBER.

Steamship Service to London, Liverpool, Genoa and Other Ports.

Southern lumber exporters are arranging to transport their own product to Europe and have organized the Lumber Exporters Line, with an initial capital of \$100,000, officers having been named as follows: President, Harry Piaggio of Gulfport, Miss.; vice-president, Geo. D. Burgess of Russe & Burgess, Memphis, Tenn. The company plans to send ships to London, Liverpool and Genoa, later to other ports, utilizing 60 per cent. of vessel space for lumber and 40 per cent. for heavier products. Options have been taken on ships, and sailings are expected to begin in December and to continue regularly two or three times a month. Gulfport and Mobile will be the company's home ports. Mr. Burgess is president of the National Lumber Exporters' Association, and, referring to the new enterprise, is quoted as follows:

"Even after the war is over the ocean rates will remain at a prohibitory point for several years. We anticipate a tremendous demand for hardwoods to rehabilitate cities and to carry on building operations held up by the war. It is to our decided advantage, therefore, to be prepared to furnish the lumber then as well as to fill orders now."

Among others interested in the new company are the Gayoso Lumber Co., May Bros., Dudley Lumber Co., Green River Lumber Co., all of Memphis; W. T. Stewart, vice-president and general manager of the Gulf & Ship Island Railway; A. L. Staples, vice-president of the Bank of Mobile, and J. W. Summerville of Hunter, Benn & Co., Gulfport and Mobile.

Vessels Built in United States.

The Bureau of Navigation, Department of Commerce, reports 316 sailing, steam and unrigged vessels of 46,276 gross tons built in the United States and officially numbered during the three months ended September 30, 1915, and 283 sailing, steam and unrigged vessels of 56,510 gross tons for the corresponding period of 1914. Those built during the 1915 period were as follows:

Kind.	Atlantic and Gulf.		Pacific.		Great Lakes.		Western rivers.		Total.	
	No.	Gross.	No.	Gross.	No.	Gross.	No.	Gross.	No.	Gross.
Wood :										
Sailing ..	14	4,038	..	..	..	..	..	..	15	4,038
Steam ..	92	2,200	52	2,161	29	546	22	397	196	16,223
Unrigged.	41	9,551	19	1,114	6	654	12	161	78	11,689
Total.	147	15,789	71	3,275	35	1,200	34	558	280	30,940
Metal :										
Sailing ..	..	..	..	..	..	..	..	..	..	..
Steam ..	10	15,863	1	222	6	7,513	5	147	22	22,716
Unrigged.	3	1,646	..	..	..	..	2	37	5	1,683
Total.	13	17,509	1	222	6	7,513	7	184	27	25,402

*Including one sailing vessel built in Porto Rico, 7 gross tons.

†Including one steam vessel built in Hawaii, 19 gross tons.

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RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

BUILDING FOR MORE TRAFFIC.

Western Maryland's New Activities and Improved Financial Showing.

In the annual report of the Western Maryland Railway Co. President Carl R. Gray gives an interesting summary of the new construction which has been and is being done. It is stated that the modern fireproof, reinforced steel and concrete grain elevator of 900,000 bushels capacity, together with a pier and dredged slip at Port Covington, Baltimore, should be ready for use by December 1, and that they will materially increase the company's revenues from Western grain to go out through the port of Baltimore. This improvement will cost \$700,000.

Construction is soon to begin upon the line of the Fairmont-Bingamon Railway in West Virginia, which will be about eight miles long from a point near Hutchinson, on the Baltimore & Ohio Railroad, to Wyatt, W. Va., this line to be used for carrying out coal from mines of the Consolidation Coal Co., as is the purpose of the Fairmont-Helens Run Railway, on which construction is already in progress from Chiefton, W. Va., for a little more than six miles up Helens Run. These two lines should be finished by July next. A trackage arrangement for a term of 50 years has been made with the Baltimore & Ohio Railroad Co. for the transportation of the coal from both of these lines on Western Maryland trains to the main line of the latter at Connellsville, Pa., 80 miles. The annual output of these mines is 2,000,000 tons. In the Somerset coal region of Pennsylvania the Western Maryland has built and put in use part of another coal branch from Coal Junction, to serve two mines, one of which has been reached, and is shipping coal, and the extension to the other will soon be finished. This product will also be carried out over the Baltimore & Ohio Railroad from Coal Junction about 22 miles to Rockwood Junction, on the Western Maryland main line, under a like trackage arrangement. The yearly output of these mines is 1,500,000 tons. The capital stock of the three branches is owned by the Western Maryland Railway Co.

This new construction will enable the company for the first time to participate in the transportation of the low volatile smokeless coal of Central Pennsylvania and the gas coals of the Fairmont district of West Virginia. As the mines have to be developed, a period of from 18 months to two years will elapse before their output can be expected to reach the figures named.

The Nessle branch, from Charlton, Md., to the southern bank of the Potomac River, 2.84 miles, was finished and placed in operation on July 7 of this year. It connects with the Williamsport, Nessle & Martinsburg Railway, and a large tonnage of limestone destined for use by furnaces in the Pittsburgh district will be received from it.

It is expected that the equipment of all of the main line from Baltimore, Md., to Connellsville, Pa., 256 miles, with electric automatic block signals will be completed about February, 1916. The installation now in progress is from Emory Grove via Westminster to Hagerstown, Md.; from Williamsport to Big Pool, Md., and from Colmar to Connellsville, the aggregate distance being 146 miles. The other portions of the main line have been equipped with the improved signals for some time, the last part to be finished being from Big Pool to Cumberland, Md., 61 miles.

There was a decrease of more than 20 per cent. in operating expenses during the year, and it is remarked that the transportation ratio was only 35.19 per cent., as compared with 46.28 per cent. last year. Moreover, the net revenue train load has been increased from 558 to 735 tons, and the earnings per freight train mile from \$3.09 to \$3.85. In the total operating revenues there was an increase of more than \$288,000 from coal shipments and of very nearly \$160,000 from miscellaneous freight.

The comparative income account shows operating revenues \$8,682,458.96, increase as compared with the next preceding fiscal year \$415,722.69; operating ex-

penses \$6,257,412.21, decrease \$1,591,218.32; net operating revenue \$2,426,046.75, increase \$2,006,941.01. Total tax accruals were \$306,000, and deducting these, together with uncollectible revenue and loss on miscellaneous operations, from the net operating revenue leaves the total operating income at \$2,118,257.85, increase \$1,964,110.90; gross income \$2,387,123.82, increase \$2,005,521.44; deficit after total deductions \$907,905.35, decrease \$1,807,759.23.

The balance-sheet for the system shows total assets of \$131,185,385.45, including the property investment at \$111,463,683.95.

Under the heading of "financial readjustment" it is stated that the directors have for some time been preparing and considering plans to readjust the present obligations and to make ample provision for the capital requirements of the company, but that the disturbed financial situation during the past year, due to the European war, necessitated postponement of the plans until more normal conditions were restored. But, with the increasing favorable state of the company's earnings, the prospect for formulating a plan of financial readjustment at a reasonably early date should be materially improved.

SOUTHERN PACIFIC REPORT.

A Good Showing Notwithstanding Unfavorable Conditions Last Year—Improved Outlook.

In the annual report of the Southern Pacific Company, Julius Kruttschnitt, chairman of the executive committee, says that although the railway operating revenues decreased 6.25 per cent., there was a decrease of but 5.32 per cent. in total operating income, because there was a reduction of operating expenses and of railway tax accruals, these being accomplished notwithstanding the cost of locomotive fuel increased, wage schedules rose, valuation expenses increased and there was also a large increase in charges to operating expenses for equipment depreciation and retirements, owing to a new classification required by the Interstate Commerce Commission. Were it not for these "abnormal and uncontrollable charges, total operating income would have shown an increase despite the large decrease in operating revenues."

Mr. Kruttschnitt also says that since the opening of the Panama Canal August 13 of last year the company's gross revenue has been considerably reduced because ships have taken a substantial volume of freight formerly carried by rail. But a readjustment of rates is now being made which is expected to check the diversion of traffic to the canal steamship lines. At the outbreak of the war in Europe the prevailing business depression became aggravated on the company's line. Some of the copper mines were closed and others were operated on only half-time, this having the effect of reducing earnings from the transportation of their products and from hauling fuel which they used in operating. Construction of new buildings was retarded and railroad construction and development were almost abandoned, these conditions causing a material decrease in the revenue from transportation of lumber and other materials used in building, etc. Earnings also decreased on general merchandise and miscellaneous traffic. Business and pleasure travel were likewise adversely affected by these conditions, so that there was a large decline in passenger traffic earnings, and "this reduction has been increased by serious inroads made upon local railroad travel by automobile competition, which the improvement of highways has encouraged and rapidly developed. While these losses were offset to some extent by exposition travel, the increased earnings derived from that source before the close of the year were not sufficient to affect materially the general results."

Although there was not much done in the way of railroad construction, the company erected a number of buildings and bridges for the improvement of its facilities in the South, including two steel-frame warehouses at Galveston, also a reinforced concrete grain elevator of 1,000,000 bushels capacity at Galveston, now under construction.

The consolidated income account of the Southern Pacific and its proprietary companies shows railway operating revenues for the year ended June 30, 1915, \$129,805,675.09, decrease as compared with last year \$8,654,583.47, or 6.25 per cent.; railway operating expenses

\$87,753,842.31, decrease \$5,908,424.62, or 6.31 per cent.; net revenue from railway operations \$42,111,832.78, decrease \$2,746,158.85, or 6.12 per cent.; total operating income after railway tax accruals and uncollectible railway revenues \$35,689,613.80, decrease \$2,005,753.26, or 5.32 per cent.; gross income \$53,481,177.94, decrease \$9,098.85, or .18 of 1 per cent.; net income \$20,570,319.47, decrease \$687,508.35, or 3.23 per cent.; income balance transferred to the credit of profit and loss after deducting income applied to sinking and other reserve funds \$19,630,594.90, decrease \$821,620.85, or 4.02 per cent.

The total assets of the Southern Pacific Company and its proprietary companies are \$1,561,134,479.79, increase as compared with last year \$21,435,518.45. The investment in road and equipment is \$908,712,243.46, increase \$6,080,284.18.

LAGER EQUIPMENT SAVED MONEY.

Illinois Central Report Shows Encouraging Results for a Trying Year.

Much that is encouraging is to be found in the sixty-fifth annual report of the Illinois Central Railroad, which covers its fiscal year ended June 30, 1915. President C. H. Markham says, for instance, that the expenditures of recent years for additional facilities, as well as for maintenance of track and structures, together with the purchase of a large number of locomotives of increased power and cars of greater capacity, enabled the company to curtail expenses in line with the decrease in its revenue resulting from the decline in the lumber business and other causes, including the low price for cotton. As a result of the betterments, while the total railway operating revenues decreased 6.34 per cent., the ratio of railway operating expenses to the revenues was only 77.10 per cent. this year, as against 77.08 per cent. last year. Although the bituminous coal traffic showed a substantial increase both in tonnage and revenue as compared with 1914 and there was also a heavy increase in the movement of grain through the port of New Orleans, which added materially to the year's revenues, these gains were not sufficient to offset the loss in revenue owing to the decline in lumber traffic and the heavy shrinkage in merchandise and miscellaneous freight business. The decrease in freight revenue was more than 6 per cent. and in passenger revenue nearly 8 per cent. The decrease in total operating revenues was 6.34 per cent. and in operating expenses 6.31 per cent.

The new equipment acquired included 50 Mikado type locomotives, 25 switching locomotives, 101 passenger train cars and 9332 freight cars. There were 68 locomotives sold, also 13 passenger cars and 4916 freight cars, so that the net increases in these several classes of equipment were 7 locomotives, 88 passenger train cars and 4416 freight cars. There was a liberal increase in the tractive power of all locomotives, and also in the capacity of freight cars.

Many improvements and additions were made to the roadway and structures, some of which were as follows: Laying 90-pound rails on 262 miles of track and relaying 62½ miles with heavier rails; completion of second main line track between Fulton, Ky., and Memphis, Tenn.; reduction of grades between Paducah and Princeton, Ky.; elevation of tracks and construction of new passenger facilities at Memphis; erection of car repair shed, roundhouse, etc., at Princeton, Ky., also roundhouse, machine shops, car repair shop, etc., at Jackson, Miss., besides the installation of electric automatic block signals on an aggregate of 162 miles of line and the construction of several permanent bridges and trestles to replace structures of temporary character.

The income statement of the company shows total railway operating revenues \$61,700,372.48, decrease \$4,173,327.54; total railway operating expenses \$47,570,147.65, decrease \$3,205,179.81; net revenue, rail operations, \$14,130,224.83, decrease \$968,147.73; net railway operating revenue after considering outside operations \$14,130,355.50, decrease \$944,366.22; railway operating income \$10,878,472.88, decrease \$861,001.77; gross income \$18,537,900.91, decrease \$522,174.07; net income \$6,859,161.66, decrease \$1,279,662.77; balance to credit of profit and loss after applications to sinking funds, etc., and additions and betterments \$6,705,258.80, decrease \$1,391,922.88.

HEAVY PURCHASES OF EQUIPMENT.

\$2,000,000 for Chesapeake & Ohio—Illinois Central Buys Rails at Birmingham, Etc.

Chesapeake & Ohio Railway directors have authorized the purchase of about \$2,000,000 of new equipment, including 16 large freight locomotives, 1 passenger locomotive and 1000 hopper coal cars of 70 tons capacity. Bids have been invited, and it is expected that contracts will soon be let.

Illinois Central Railroad has ordered 47 Mikado type locomotives from the Lima (O.) Locomotive Corporation and 3 Santa Fe type from the American Locomotive Co., New York; also 1000 refrigerator cars from the American Car & Foundry Co., St. Louis.

Eastman, Gardiner & Co., Laurel, Miss., have received 5 steel-frame logging cars.

Durham (N. C.) Traction Co. will purchase 6 large cars.

Western Maryland Railway has ordered 2000 steel hopper cars from the Pullman Company, Chicago. Another order for 1000 more hopper cars is to be placed in a few months.

Central of Georgia Railway has ordered 8 Mikado type and 4 Pacific type locomotives from the Lima Locomotive Corporation; also 500 fruit cars from the American Car & Foundry Co. and 500 box cars from the Pullman Company.

Atlantic Coast Line has ordered 200 flat cars from the American Car & Foundry Co.

Illinois Central Railroad has ordered 20,000 tons of rails from the Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.; also 15,000 tons from the Illinois Steel Co., Chicago.

Missouri Pacific Railway is reported to have ordered 15,000 tons of rails to be rolled at Eunice, Ala.

Norfolk & Western Railway will build 1000 all-steel coal cars in its own shops; it has also ordered 4000 tons of rails from the Pennsylvania Steel Co. and 1000 tons from the Cambria Steel Co.

Pennsylvania Railroad will build 100 all-steel coal cars in its Altoona shops.

Wheeling & Lake Erie Railway is expected to be in the market for 450 gondola cars.

Baltimore & Ohio Railroad has ordered 1 Mallet locomotive from the Baldwin Works, Philadelphia.

Southern Public Utilities Co., Charlotte, N. C., has let contract to the Southern Car Co., High Point, N. C., for 5 electric cars for the street railway at Anderson, S. C. They will be 26 feet long, with steel frames and sides and steel round front vestibules. Some will have General Electric Co. and others Westinghouse motors. Taylor trucks, Peacock adjustable brakes of the McWhorter type and Railway Utility Co. exhaust type ventilators will be used. The cars are for one-man operation.

New Orleans & Northeastern Railway has ordered 4 Mikado type locomotives from the Baldwin Works.

Missouri, Kansas & Texas Railway has ordered 200 ballast cars from the Rodger Ballast Car Co., Chicago.

Interstate Railroad has ordered 2 locomotives from Baldwin's.

Louisville & Nashville Railroad is reported in the market for 400 gondola cars and 1000 box cars.

Missouri, Kansas & Texas Railway will soon be in the market for 15,000 tons of rails.

Important Railway Development Association Meeting.

It is expected that the semi-annual meeting of the Railway Development Association, which will be held in New York November 9, 10 and 11, will be the most important in its history, as it will bring together railroad and Government officers and business men to consider industrial and agricultural development and commercial activity in general.

Among the speakers will be Hon. Fred. C. Howe, United States Commissioner of Immigration, who will discuss immigration; J. H. Hale, "the Georgia peach king," will talk on fruit growing; W. W. Wood of the Baltimore & Ohio Railroad, on "What Makes an Industrial Department Permanent;" C. G. Dana of the Santa Fe system, "Eliminating Competition by Joint Location of Industries;" Prof. Alva Agee, dean of the New Jersey State College of Agriculture, "Agriculture;" Presi-

dent John C. Emig of the Railway Development Association, "Acquisition of Land for Industrial Location;" James A. Hearne of the New Orleans & Northeastern Railroad, "Horticulture and Agriculture in the South;" S. A. Hughes of the St. Louis & San Francisco Railroad, "Domestic and Foreign Immigration;" C. C. White of the United States Department of Agriculture, "Markets and Rural Organization;" W. P. Hartman of the Chicago, Rock Island & Pacific Railway, "Opportunities in the Making."

A number of other addresses are also expected, including one by United States Senator John W. Weeks of Massachusetts, who is to be a guest at an informal dinner on November 10. Several prominent railroad presidents have also accepted invitations. H. O. Hartzell of the Baltimore & Ohio Railroad is secretary of the association, and J. Hampton Baumgartner, also of the Baltimore & Ohio, is chairman of the publicity committee.

ILLINOIS CENTRAL PROSPERING.**Officers and Directors Order Cars, Engines and Rails to Handle Growing Traffic.**

President C. H. Markham of the Illinois Central Railroad, while at Birmingham the other day with some of the directors and other officers of the system, remarked that business over the lines of the company had so increased that he believed by the first of the year it would be able to make as good a record as it did two years ago. As an illustration of the confidence which was felt in the future he called attention to the fact that an order had been placed for 40,000 tons of steel rails, of which 20,000 tons will be rolled in the Birmingham district, and furthermore, 50 locomotives have been ordered for the Illinois Central Railroad and 8 for the Central of Georgia Railway; also 2000 cars for the former and 1000 for the latter.

In the party with Mr. Markham were six members of the directorate, besides several of the other officials from Chicago. They traveled in a special train. All of them were optimistic concerning business conditions, expressing the belief that good times had come to stay, and that they would grow better daily.

Heavy Freight Movement in the South.

The Southern Pacific Company is handling a very large quantity of freight through the ports of New Orleans and Galveston. Big shipments of food products are being carried there by rail from California and other parts of the West and South on its system, and its steamers operating from those ports to New York have been unable to carry all that was offered. There are now 15 ships in service, and the company is chartering several more to assist in relieving the congestion, and for a while it is possible that a vessel will leave each port daily. It was necessary, therefore, for several days to refuse to accept any more freight. Much of the traffic consists of canned goods from California. On the land lines of the company there have been ample facilities and there has not been any lack of cars. It is expected that within 10 days or two weeks the steamship situation will be so improved that the freight will be handled through from rail to water without delay. The closing of the Panama Canal is a factor in the case, for, occurring at a season when shipments are always heavy, it has turned to the railroads much business which would otherwise have been carried through the Isthmus, and has thus intensified the congestion.

Extension to Belmont Begun.

The Piedmont & Northern Lines, Charlotte, N. C., have begun construction of a branch from Belmont Junction to Belmont, N. C., four miles, the contract being let to the Charlotte Construction Co., it being stipulated that the line shall be complete within 45 days from October 22, and that freight and passenger service shall begin within 15 days after that date. A combination freight and passenger depot will be erected in the center of Belmont; it is to be finished in two months from October 22. A car for passenger service will be operated from Belmont to the Junction, where connec-

tion will be made with the main line electric trains running between Charlotte and Gastonia. The contract for the car has been given to the Southern Car Co., High Point, N. C. It will be mounted on trucks from the Taylor Truck Co., Troy, N. Y., and its electric equipment will be Westinghouse 530-Y-6 direct-current motor. It will be 26 feet long, with steel framing and body and all-steel round front vestibules.

Belmont Abbey, the home of Bishop Haid, and two large colleges will be served by this extension, as well as a number of cotton mills and other industries which will obtain additional freight facilities.

Baltimore & Ohio Earnings Increasing.

An increase of more than \$500,000 in its net operating revenue is reported by the Baltimore & Ohio Railroad in its statement for September as compared with the same month of last year.

The gross operating revenue for the month was \$9,617,819, increase \$835,487; total operating expenses \$6,424,673, increase \$275,943; net operating revenue \$3,193,673, increase \$59,544.

For the first three months of the current fiscal year the total operating revenue was \$27,637,429, increase \$2,008,033; total operating expenses \$17,972,335, increase \$16,408; net operating revenue \$9,665,094, increase \$1,991,625.

With a continuation of this ratio of gain the gross earnings of the system for this year will exceed the \$100,000,000 mark, as they did in 1913.

Good Roads and Streets**SOUTHERN HIGHWAY ACTIVITIES.****Record of Week's Progress in Improvements in City and Country.**

Details in regard to road and street undertakings and bond issues, briefly mentioned below, are given under the proper headings in our "Construction Department" and "New Securities," published elsewhere in this issue.

Bonds Voted.

Charlotte, N. C.—City will issue \$17,000 bonds to construct 17,500 square yards of sidewalks.

Decatur, Tex.—City issued \$3000 bonds for street and bridge work.

Donaldsonville, La.—Ascension Parish, First Road District, voted \$15,000 bonds to extend gravel road for five miles, etc.

Donaldsonville, La.—Ascension Parish, Road District No. 2, voted \$50,000 bonds to construct gravel roads, etc.

Gulfport, Fla.—City voted \$9000 bonds to construct sand-asphalt streets.

Lexington, Mo.—Lafayette county, Wellington Special Road District, voted \$55,000 bonds for road improvements, etc.

Louisville, Ky.—Jefferson county voted \$7400 on emergency road work.

Miami, Fla.—Dade county voted \$275,000 bonds to construct county's part of Tamiami Trail.

Orange, Tex.—Orange County Precinct No. 3 voted \$7000 bonds to construct roads.

Beverly, Mo.—City voted \$2500 bonds to improve streets.

Batesville, Tex.—Zavala County Road Precinct No. 1 voted \$15,000 bonds to improve roads.

Rockingham, N. C.—Richmond county will issue \$25,000 bonds for road improvements.

Bonds to Be Voted.

Oakville, Tex.—Live Oak County, Precinct No. 1, votes October 30 on \$100,000 bonds to construct roads.

Claremore, Okla.—Rogers County Townships (nine) vote November 6 on \$303,000 bonds for road construction.

Pensacola, Fla.—Escambia county votes February 1 on \$1,000,000 bonds for road construction, etc.

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Pulaski, Tenn.—Giles county votes December 20 on \$50,000 bonds to construct roads.

Sherman, Tex.—City will vote on \$150,000 bonds to improve streets, etc.

Tyler, Tex.—Smith county will vote on \$100,000 bonds to construct roads.

Contracts Awarded.

Ackerman, Miss.—City awarded \$25,000 contract to construct concrete sidewalks.

Conway, Ark.—City awarded contract for 15,000 square yards of concrete pavement.

Gadsden, Ala.—Etowah county awarded \$4901 contract for road construction.

Graham, Tex.—Young county awarded contract to construct and repair roads and bridges to cost \$20,000.

Jackson, Miss.—City awarded contract to cover and bind two miles of Rankin pike.

Lexington, Ky.—City awarded contract for about 4000 feet of concrete sidewalks.

Memphis, Tenn.—City awarded \$9011 paving contract.

Newport, Tenn.—Cocke county awarded \$150,900 contract to grade and macadamize roads.

Princess Anne.—Princess Anne county awarded \$495.17 contract to construct three miles of highway.

Salisbury, Md.—Wicomico county awarded \$13,035 contract to construct two miles of oyster-shell macadam road.

Tampa, Fla.—City awarded contract to construct 50,000 linear feet of concrete curbing.

Vernon, Ala.—Lamar county awarded contract for 18 miles of road.

Wauchula, Fla.—City awarded contract for 10,000 to 12,000 square yards of brick paving.

Contracts to Be Awarded.

Baltimore, Md.—City will pave 15 miles of streets during 1916.

Beaumont, Tex.—Jefferson county invites bids until November 8 to construct 11 miles of road.

Brookhaven, Miss.—Lincoln County, District No. 1, will construct two miles of gravel roads.

Buckingham, Va.—Buckingham county receives bids until November 1 to construct 26.21 miles of soil roads and grade 2.88 miles of road.

Catlettsburg, Ky.—Beyd county will expend \$75,000 for road construction.

Dothan, Ala.—Houston county receives bids until November 18 to construct 42 miles of road.

Easton, Md.—Talbot county receives bids until November 9 for constructing 7.24 miles of State-aid highway.

Greenville, S. C.—City receives bids until November 10 to construct 60,000 square yards street paving, 10,000 square yards cement gutters, 12,000 linear feet granite curb, etc.

Hondo, Tex.—Medina county receives bids until November 8 to construct 20 miles of graveled roads.

Miami, Fla.—City receives bids until November 8 to grade and pave with asphaltic concrete and binder course on concrete foundation about 15,000 square yards of streets; also grade and pave with sand and asphaltic oil about 100,000 square yards of streets.

Monroe, La.—City invites bids until November 5 to place about 37,000 square yards of gravel with tarvia top, 24,800 linear feet curb and gutter, etc., on various streets.

Morganfield, Ky.—Union county will construct 7 1-5 miles of road.

Promoting Good Roads in Southern Appalachians.

Several hundred delegates from all parts of the Appalachian South attended the recent annual meeting of the Southern Appalachian Good Roads Association in Bluefield, W. Va.

Interesting addresses were made by many men prominent in this section dealing with the economic advantages of good roads, while others were delivered bearing upon the proper methods of construction. Resolutions

were adopted urging the National Congress to appropriate \$10,000,000 at the rate of \$2,000,000 a year for the purchase of additional forest lands in the Southern Appalachians and the White Mountains under the Weeks law; asking Congress to make an appropriation for the system of highways through these national forests; endorsing the Federal aid bill for the construction of national highways; endorsing and promoting the construction of a highway to be known as the Appalachian Highway, following the crest of the Appalachian region and extending from Maine to Louisiana; urging more definite and uniform traffic and road laws and those relating to prison labor on public roads, and recommending that all funds derived from the registration fees or license taxes on all motor-driven vehicles should be devoted to the maintenance of improved roads.

Lexington, Ky., was selected for the next annual meeting. The following officers were elected:

President and Treasurer—Joseph Hyde Pratt, Chapel Hill, N. C.

Vice-President at Large—Henry Roberts, Bristol, Va., Tenn.

State Vice-Presidents—John A. Smith, Georgia; J. N. Fisher, Tennessee; S. H. Webb, North Carolina; Hon. H. C. Stuart of Virginia; Jas. Maret, Kentucky; J. M. Jenkins, South Carolina; John Craft, Alabama; Blake Taylor, West Virginia; S. J. Hitchens, Maryland.

Executive Committee—George S. Powell, North Carolina; Prof. S. B. Slack, Georgia; W. E. Myer, Tennessee; W. S. Fallis, North Carolina; H. B. Varner, North Carolina; S. L. Von Gemmingen, Virginia; A. D. Williams, West Virginia; C. C. Crabb, Kentucky; E. J. Watson, South Carolina; G. P. Coleman, Virginia; W. S. Keller, Alabama; H. G. Shirley, Maryland; M. V. Richards, Washington, D. C.

Secretary—C. B. Scott, Virginia.

Assistant Secretary—Miss H. M. Berry, North Carolina.

American Highway Association Elects Officers.

At the annual meeting of the American Highway Association, held in Oakland, Cal., in September last, the following officers were elected:

President, Fairfax Harrison; vice-president, Logan Waller Page; treasurer, John Burke; directors, W. T. Beatty, George W. Cooley, Clarence A. Kenyon, James H. MacDonald, E. J. Mehren, Dr. Joseph Hyde Pratt and Henry G. Shirley.

A resolution was also adopted appointing a committee to confer with similar committees from other road organizations looking to greater harmony and correlation of the organized good-roads movement throughout the United States. This committee is as follows:

S. E. Bradt, Illinois, chairman; W. R. Roy, Washington; A. B. Fletcher, California; W. D. Sohier, Massachusetts; T. H. MacDonald, Iowa; W. E. Atkinson, Louisiana; G. P. Coleman, Virginia, and F. F. Rogers, Michigan.

\$1,500,000 for Street Paving.

The determination of the municipal officials of New Orleans to provide all the streets of their city with modern paving is emphasized in the announcement that arrangements are being completed for an expenditure of \$1,500,000 during 1916. Ordinances specifying the material and the awarding of contracts are now being considered by the Commission Council, 42 streets to be improved. Bids for the construction involved have already been advertised, wood block and bitulithic being the paving specified for most of the streets. Work is to start about January 1.

American Road Builders' Convention and Exhibition.

At the meeting of the board of directors of the American Road Builders' Association, held in New York city this week, it was unanimously voted to hold the next convention and exhibition of the association during either January or February next, the exact time and place to be left to the executive committee. Cleveland, Ohio and Pittsburgh, Pa., are the two cities whose relative facilities are now being considered by the committee for this convention.

FOREIGN NEEDS

Machinery and equipment wanted abroad are mentioned in many letters received by the MANUFACTURERS RECORD, which is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. For the benefit of our subscribers seeking foreign trade we publish the following extracts from recent letters:

Electric Lamps, Copper, Brass, Etc.

J. Massignon, civil engineer, 24 Rue de l'Epinette, Saint-Mande (Seine), France:

"I have orders for a large number of electrical lamps and metallic filaments of from 5 to 50 candle power, suitable for 110 to 220 volts. These lamps must be well made in every respect. Information should be furnished with guarantee as to candle-power and watts, also as to how long lamps will last. Price should include package and shipment by sea, and they ought to be delivered at some port of France or England. There is a heavy demand in France for shoe leathers, and there is also a demand for electrical lamps, sheet brass, copper, zinc and aluminum. Please give us prices and terms of sale on sheet brass of .25 m/m, $\frac{1}{4}$ m/m. Size could be about 100 m/m long and wide. This brass is intended for covering for electrical lamps. We also want sheet aluminum 90 m/m wide, 10 m/m thick, weight about 6000 kilogrammes; also zinc pure (called in France zinc for artistic purposes) in ingots or pigs; also copper wire for city trolley lines. Let us know what quantities you can furnish or can be supplied to us monthly of these articles, and please give us the possible price, including packing, etc., delivered at a French or English port."

A Letter from London.

J. Glover & Sons, Audrey House, Ely Place, London, E. C., England:

"Thanks for copy of MANUFACTURERS RECORD, which we have carefully perused with much interest. We say that the information given in your Construction Department should be more than valuable to your readers, as it must assist materially to build up any concern on a sound basis. We only regret we cannot avail ourselves of the matter given. Any American makers who wish to do business with us, either sole selling or sole buying, must be prepared to support us in every way—we are straight, and they must be so. We do not wish to exploit goods already put on the market here and spoilt through bad handling. We are out for the "good goods" from your country, and the manufacturers must be of the highest integrity. We can sell if they can supply it."

Wants Agencies for Russia.

Galpern & Dveyrin, P. O. Box 1048, Moscow, Russia:

"Russian merchants are endeavoring to replace German manufactures by others. We should be much obliged if you would, through your publication, put us in touch with the manufacturers of the following goods: All kinds of paper; pens; typewriters and adding machines and supplies; dyestuffs for textile industry; fiber; steel instruments; any salable novelties. Being possessed of considerable trading as well as private capital, and moreover being well organized and possessing a good network of connections over the whole of Russia, we should prefer to enter into relations with American manufacturers who would be prepared to consider a proposal for the whole of Russia."

Interested in American Products.

Semtov S. Molho, Salonique, Greece:

"I have interest to hear from American manufacturers and exporters. Insert my name in your MANUFACTURERS RECORD. I am interested in articles that can be exported easily, and mostly the following: Flour; semolina; starch; wheat; cotton oil; oil for the fabrication of white and green soap; oil for machines, etc.; coffee; rice; matches; leather and skins; caustic soda and other similar chemical products; white linen and other linen articles; cotton or wool; iron; steel; nails; iron wire—white and burned."

Construction Department

IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

BRIDGES, CULVERTS, VIADUCTS

Ala., Mobile.—Committee submitted plan to Alabama & Mississippi Gulf Coast Highway Assn. for connecting by highway Baldwin and Mobile counties; plan provides for construction of bridge over Spanish River, to be built jointly by two counties. (See Road and Street Work.)

Ark., Little Rock.—Chicago, Rock Island & Pacific Ry. let contract Fox Construction Co. of Little Rock to construct viaduct at 2d and McLean Sts.; 90 ft. long, 41 ft. wide and 21 ft. above grade crossing; 30-ft. driveway and 7-ft. sidewalks on each side; estimated cost \$35,000; H. R. Shields, Div. Engr. of Chicago, Rock Island & Pacific Ry., Little Rock, to be in charge of construction. (Noted in Aug.)

Fla., Monroe.—Michael Scholtz, Daytona, Fla., and others let contract to Virginia Bridge & Iron Co., Roanoke, Va., for steel work for lately-noted 22x16-ft. highway drawbridge across St. Johns River between Volusia and Seminole counties; contract for approaches and foundations let to Beasley Contracting Co., Savannah, Ga.; Engr., Atlantic Engineering Co., 606 Germania Bank Bldg., Savannah.

Fla., Pensacola.—Escambia county votes Feb. 1 on \$1,000,000 bonds to construct concrete and steel bridges and hard-surface roads. Address County Commsr.

Mo., Lexington.—Lafayette county, Wellington Special Road Dist., voted \$55,000 bonds to rebuild culverts and bridges and rock gap in Old Trails road. Address County Commsr.

Tenn., Crossville.—Cumberland County Commsr. will construct steel and concrete bridge at Sutton Ford.

Tenn., Knoxville.—Knox County Good Roads Com. let contracts to construct 18 concrete bridges from 10 to 48 ft. long; Luten Bridge Co., York, Pa., 5 bridges; R. L. Peters, 3 bridges; Brady & Griffin, 2 bridges; W. L. Brady, 3 culverts; Higgs & Peckinpah, 2 bridges; Frank Maloney, 1 bridge; Wardrobe Construction Co., 1 bridge; Cobb, Callaway & Reagan, 1 bridge. (Call for bids lately noted.)

Tex., Graham.—Young county let contract to L. G. Hamilton to construct and repair roads. (See Roads and Streets.)

Tex., Marshall.—City, H. O. Wilson, Mayor, will vote \$50,000 bonds to construct steel or concrete viaduct; T. E. Hilliard, City Engr.

Tex., Waco.—City defeated \$10,000 bonds for bridges. (See Sewer Construction.)

W. Va., Welch.—Norfolk & Western Ry., J. E. Crawford, Ch. Engr., Roanoke, Va., submitted proposition to Town Council to construct bridge across Elkhorn River, abutting on Wyoming St., across to Water St. S. A. Daniel, Mayor.

CANNING AND PACKING PLANTS

N. C., Asheville.—Asheville Packing Co., capital \$25,000, incptd. by Marcus Erwin, Morris Meyers, Edwin McKay and others.

CLAYWORKING PLANTS

W. Va., Bluefield.—Bricks.—Bluefield Brick Co. increased capital stock from \$27,000 to \$30,000 and will install additional machinery. (Lately noted to install 9-ft. dry pan before spring, etc.)

W. Va., Huntington.—Bricks.—Elkhorn Brick Co. plans to increase capital stock from \$20,000 to \$40,000.

COAL MINES AND COKE OVENS

Ala., Summit.—Summit Coal Co., capital \$10,000, incptd. by Jas. L. Davidson, E. D. Reynolds and Jas. Gallacher.

Ark., Gainesville.—Mack & Grooms (C. A. Mack of Paragould and Will Grooms, Beech Grove, Ark.) have taken option on 120 acres lignite land. (Lately noted to develop, with machinery purchased.)

Ky., Ashland.—Thos. Adams, Prest. Norton Iron Works, is reported to have purchased 28 acres land on which to build coke and coal-by-product plant; cost to exceed \$300,000; new plant to furnish coke to Norton Iron Works. Mr. Adams writes to Manufacturers Record: "This company has not decided to erect coke plant; our plans at this time are indefinite."

Ky., Elkhorn.—Elkhorn Mining Corp., Clarence W. Watson, Prest., operating company of Elkhorn Fuel Co., is preparing financial plan to provide for \$2,475,000 notes maturing Dec. 1; developing 30,000 acres coal land on Beaver Creek and tributaries in Eastern Ken-

tucky; mining in progress; new financial plan to include provision for further developments; offices with Consolidation Coal Co., Continental Bldg., Baltimore, and in New York.

Ky., Wofford.—Moss Jeillico Coal Co., Middlesboro, Ky., capital \$4000, Ray Moss, Prest., and J. G. Moss, V.-P., purchased from Peerless Coal Co. the lease held by the Peerless Co. on mines owned by Samuel Bennett; will continue developments; acreage 1600; daily capacity 400 tons.

Va., Roanoke.—Superior Coal Co., capital \$50,000, incptd.; D. D. Cox, Prest., Castlewood, Va.; Frank G. Craig, Secy.-Treas., Praise, Ky.

Va., Wythe County.—W. B. Gunton of Plainfield, N. J., is reported to develop coa. mines.

CONCRETE AND CEMENT PLANTS

Tex., Victoria—Cement Silos.—Interlocking Cement Stave Silo Co., Chas. Easton, Mgr., will establish lately-noted plant; erect \$1500 shed for cement and tools; use gasoline mixers or motors; no contracts to be let.

W. Va., Huntington—Concrete Products.—Shiplett Concrete Co., capital \$20,000, incptd. by C. N. Davis, D. W. Brown, J. L. Caldwell, Jr., and others.

COTTON COMPRESSES AND GINS

N. C., Aurora.—Thompson Ginning Co., capital \$25,000, incptd. by B. D. Thompson, H. L. Thompson and W. H. Hooker.

N. C., Wilmington.—Hilton Compress & Warehouse Co. (lately noted incptd., capital \$100,000) organized; W. B. Cooper, Prest.; I. W. Cooper, V.-P.; Harry Donkle, Secy.; will erect \$50,000 compress and warehouse; install compress equipment, cost \$25,000; real estate cost, \$25,000.

Okla., Erick.—Planters' Gin & Cotton Co., capital \$10,000, incptd. by G. B. Everett, W. H. Henke and E. R. Glisson.

Tex., Cooper.—Farmers' Gin & Mill Co., capital \$14,000, incptd. by J. A. Blackwell, C. O. Grant and A. S. Harper.

Tex., Greenville.—Farmers' Gin Co., capital \$15,000, incptd. by F. J. Phillips, John D. Middleton and L. A. Clerk.

Tex., Houston.—Clayton Gin Compress Co., capital \$35,000, incptd. by B. Clayton, M. D. Anderson and G. R. Brown.

Tex., Ladonia.—G. A. Bishop & Co. will rebuild in spring the gin lately noted burned; erect 20x24x70 ft. \$1400 ironclad building; install machinery for daily capacity about 40 bales.

COTTONSEED-OIL MILLS

Tex., Greenville.—Mt. Pleasant Oil Mill, capital \$60,000, incptd. by F. J. Phillips, John D. Middleton and L. A. Clark.

DRAINAGE SYSTEMS

Ark., England.—Indian Bayou Drainage Commsr., J. R. England, Chrmn., will issue \$15,000 bonds for drainage work.

Fla., New Smyrna.—Lake Ashby Drainage Dist. established; comprises about 45,000 acres in Volusia county; landowners will organize at Courthouse, De Land, Fla., Nov. 9; preliminary engineering by Jacksonville (Fla.) office of Isham Randolph & Co., Chicago; contemplated that drainage system will include two outlets, one east into North Indian River, the other south into upper St. John's River; Attnys., Van Agnew & Crawford, Heard National Bank Bldg., Jacksonville, with Murray Sams of De Land as associate. (Noted in August.)

La., Abbeville.—Vermilion parish will vote on \$200,000 Eighth Ward drainage bonds. Address Police Jury.

La., Abbeville.—Coulee Kinney Drainage Dist. is considering \$75,000 bond issue to construct drainage system. Address Drainage Commsr.

La., Abbeville.—Young's Coulee Drainage Dist. of Vermilion parish will construct 200,000 to 250,000 yds. drainage canal; Drainage Commsr., V. L. Caldwell, Prest., receive bids until Nov. 1. (See Machinery Wanted—Dredging.)

La., Alexandria.—Rapides Parish Drainage Dist. is reported to vote on \$34,000 bonds to construct drainage system. Address Drainage Commsr.

La., Lafayette.—Lafayette Parish Indian Bayou Subdrainage Dist. of Dist. No. 1 contemplates constructing total of 30 mi. canals; 5 open ditches, 12 to 20-ft. bottom, 3 to 5 ft. deep; loam and clay, dredge work; estimated cost \$26,000; drain 24,000 acres for farming cotton, etc.; gravity drainage; Engr., W. S. White, Crowley; lately-noted bonds not yet approved and sold.

La., Estherwood.—Fifth Ward Drainage Dist. No. 1, Ellis L. Hoffpauir, Prest., voted \$38,000 drainage bonds for construction previously noted (in June) let to Ziegler Dredge Co., Jennings, La.; work progressing.

Miss., Clarksdale.—A. L. Dabney, Engr., Porter Bldg., Memphis, Tenn., invites bids to construct 40,000 yds. small ditches in Yazoo Delta near Clarksdale; average depth, 3 ft.; bottom 6 and 8 ft. (See Machinery Wanted—Excavation.)

Mo., Rich Hill.—Interstate Drainage Co. will be organized by John W. Layne of Nevada, Mo., and others; plans to provide better outlet for congested waters at head of Big Osage River by enlarging and thereby overcome back water of that stream.

Tenn., Selmer.—Hurricane Creek Drainage Dist. Commsr. let contract P. H. Thrasher of Selmer to construct drainage canal near McNairy-Hardin county line; length 8 mi.; excavation 142,000 cu. yds.

Tex., Port Arthur.—City received report from J. F. Coleman, Consol. Engr., 930 Iberville Bank Bldg., New Orleans, La., on construction of system of drainage canals and levees. (See Miscellaneous Constr.)

ELECTRIC PLANTS

Ala., Fairhope.—City contemplates installing electric-light plant and acquiring water-works; estimated cost \$12,000. Address The Mayor.

Ark., Mountain Home.—City Council granted franchise for electric-light plant to L. J. Goodrich and Dillen Underhill of Mountain Home and H. M. Tatum of Sparkman, Ark.; capacity 3000 lamps.

Ark., Yellville.—Yellville Light, Ice & Power Co. organized by W. C. Stephenson of Marshall, Ark., to construct electric system; also contemplates installing ice plant. (City lately noted to have granted franchise to Mr. Stephenson to build electric-light, ice and power plant.)

Ga., Graymont.—City engaged W. Hopson Goodloe, Macon, Ga., to design and supervise construction of lately-noted electric plant to be built jointly by Graymont and Summit; each city voted \$5000 bonds. (See Ga. Summit.)

Ga., Summit.—Citizens of Graymont and Summit have both engaged W. Hopson Goodloe, Macon, Ga., to prepare plans for and supervise construction of lately-noted electric-light system, with joint plant midway between the two cities; \$10,000 available-\$5000 bonds for each city.

Ky., Whitesburg.—Wiley W. Gibson & Son, Mater, Ky., will at once arrange for electric-light plant lately noted to be established. (See Machinery Wanted—Electric-light Plant.)

Md., Baltimore.—Board of Estimates authorized Raleigh C. Thomas, Ch. Engr. Electrical Com., to resume construction work on municipal conduit system to extent of \$15,000.

Md., Easton.—Newton Electric Co. is negotiating for construction of electric transmission system from Easton to Oxford, about 15 mi.; secure electricity from municipal electric plant at Easton. (See Machinery Wanted—Electrical (Transmission) Machinery.)

Miss., Pass Christian.—Joint Aldermanic Citizens' Committee, J. M. McGathery, Chrmn., received report from Xavier A. Kramer, Consol. Engr., Magnolia, Miss., on purchase noted to hour; of manufacturer noted to hour; of manufacturer Lamb, Ch. V.-P. and Bend, Ind.

N. C., N. C.—River ne.

Tenn., W. Ewell flour and machine Capital.)

Tex., capital \$15,000, O. Gran.

Tex., \$50,000, J. W. Williams.

(subsidiary of Cupples Station Power Co.) to operate electric-light system.

Mo., Plattsburg.—Plattsburg Water & Power Co., capital \$12,500, incptd. by Joel Funkhouser, H. R. Riley and Edmond McWilliams.

Mo., Springfield.—City is reported to vote on bonds to construct electric-light plant. Address The Mayor.

N. C., Burnsville.—Yancey Light & Power Co., capital \$125,000, incptd. by R. W. Wilson, F. E. Watson, Ben Fountain and others.

N. C., Durham.—Durham Traction Co. will expend \$20,000 for improvements, to include railway switchboard, auxiliary equipment and plant pump at power-house and 6 cars.

N. C., Salisbury.—Southern Power Co., Charlotte, N. C., is reported to enlarge substation and install additional equipment.

Okl., Stillwater.—Electric Light and Water-works Comms. contemplate installing complete generating unit in municipal electric-light plant early in 1916; Geo. M. Smith, Supt.

Tenn., Camden.—Camden Electric Light Co., lately noted organized by J. D. Rice and Wade Lowry to succeed former company and rebuild electric plant, will expend about \$50,000; install steam machinery, 90 H. P. boiler and 75 H. P. engine; wooden power-house; ½ mi. transmission.

Tenn., Mason.—Company is being organized to install electric-light plant. Address Town Clerk.

Tex., Austin.—Austin Street Ry. Co. has plans by Leslie N. Iredell, Austin, and let contract to erect concrete and brick power-house; cost \$5000.

Tex., Beeville.—City engaged Bartlett & Ranney, Consult. Engrs., San Antonio, to prepare preliminary plans for electric-light plant and water-works; C. E. Williamson, Mayor. (See Water-works.)

Tex., Decatur.—City issued \$10,000 bonds for improvements to light and water plants. Address The Mayor.

Tex., San Angelo.—San Angelo Water, Light & Power Co. (Interstate Electric Co. of Boston, Mass.) is arranging for improvements to electric-light plant and water-works costing \$50,000. (Noted in August.)

Tex., Sherman.—City will vote on \$150,000 to improve electric-light plant, water-works and streets and extend sewer system. Address City Com.

Va., Atkins.—D. B. Musser contemplates installation of electric-light plant. (See Machinery Wanted—Electric-light Plant.)

Va., Blackstone.—City will rebuild electric light and water pumping plants lately noted burned. Address The Mayor.

Va., Waverly.—City voted on \$55,000 bonds to place under public control present electric-light plant and to construct water-works and sewer-disposal system. Address The Mayor.

FERTILIZER FACTORIES

Va., Money Point.—F. R. Thomas of Richmond, Va., purchased 8½ acre site with water frontage of 300 ft. and depth of 1200 on which to build fertilizer plant; reported cost, \$75,000 to \$100,000.

FLOUR, FEED AND MEAL MILLS

Ark., De Queen.—Walter Fowler will install chop mill; daily capacity 300 sacks.

Ga., Savannah.—Savannah Milling Co., capital \$15,000, incptd. by F. G. Beckman, J. C. Slater, H. S. Traub and others; build plant to manufacture, mill and produce hay, grain and all by-products for stock feed; building to be fireproof, concrete, 3 stories; daily capacity 5 to 10 cars; storage capacity 20,000 bu.; W. M. Torrance, Contr.; C. V. Sneedier, Jr., Archt.

Miss., Charleston.—Lamb-Fish Lumber Co. purchased power shucker and sheller lately noted to be installed; capacity 130 bu. per hour; operating in plant formerly used for manufacture of vehicle material; G. E. Lamb, Clinton, Inc., Prest.; W. B. Burke, V.P. and Gen. Mgr.; Scott Brown, South Bend, Ind., Secy.

N. C., Ashbury.—Robt. T. Joyce of Mt. Airy, N. C., will build roller flour-mill on Dan River near Ashbury.

Tenn., Dyersburg.—Ewell Milling Co., M. W. Ewell, Prest. and Gen. Mgr., will install flour and meal mill; leased building; ordered machinery. (Lately noted incptd. with \$10,000 capital.)

Tex., Cooper.—Farmers' Gin & Mill Co., capital \$14,000, incptd. by J. A. Blackwell, C. O. Grant and A. S. Harper.

Tex., Houston.—Industrial Mill, capital \$50,000, incptd. by Ed. Rand, J. A. Robertson, J. J. Whatley and R. H. Whatley.

Tex., Lubbock.—Lubbock Grain & Coal Co. will manufacture chops in connection with grain elevator. (See Miscellaneous Enterprises.)

FOUNDRY AND MACHINE PLANTS

Ala., Birmingham.—Engines and Pumps—W. T. Hicks of New Orleans, La., E. R. Cragway of Louisville, Ky., and M. J. Simpson of Cincinnati, O. (representing Northern company), are considering establishment of engine and pump manufacturing plant.

N. C., Durham.—Durham Traction Co. will expend \$20,000 for improvements, to include railway switchboard, auxiliary equipment and plant pump at power-house and 6 cars.

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Va., Huntington—Wrapping Machines—S. R. Dawson of Progressive Mfg. Co., Wheeling, W. Va., proposes to build plant for manufacturing wrapping machines.

GAS AND OIL ENTERPRISES

Ala., Bessemer.—Gas Plant.—Birmingham Ry., Light & Power Co., Birmingham, purchased Bessemer Gas Co.; will make improvements and extensions to plant.

Ark., Arkansas City—Pipe Line—Leah Pipe Line Co., capital \$25,000, organized to construct pipe line from Arkansas City to new Blackwell field, primarily to supply Leah Refinery; also proposed that Arkansas City construct 3-in. pipe line to Blackwell field.

Fla., Bradenton—Gas Plant.—Manatee Heat, Light & Power Co., capital \$10,000, incorporated to manufacture gas for heat, light and power; Thos. Adams, Prest., 203 Cleveland Ave., Philadelphia, Pa.; S. W. Chiles, V.P., South Bethlehem, Pa.; W. M. Graham, Secy., Bradenton.

La., Lake Charles—Gas Plant.—Lake Charles Gas Co. organized by J. C. Fressler and G. C. Boyle to build gas plant and distributing system; office in Von Phul and Gordon Bldg.; let contract for construction to American Gas Construction Co. of Chicago; 17 mi. mains; daily capacity 200,000 ft.; estimated cost \$100,000. (City lately noted to have ratified franchise granted to Messrs. Fressler and Boyle.)

N. C., Wilmington.—Tidewater Power Co. plans to extend gas service from Wilmington to Wrightsville Beach and 7 intervening towns; distance 10 mi.; also build several stations on its suburban line; expend from \$50,000 to \$60,000.

Okl., Drumright.—Sealy Oil Co., capital \$10,000, incptd. by Chas. A. Towne, Frank N. Sealy and Jasper M. Towne.

Okl., Sapulpa.—Vivian Oil & Gas Co., capital \$25,000, incptd. by W. A. Stinson of Sapulpa, J. A. Stinson (1213 Main St.), and J. V. Baird, both of Dallas, Tex.

Tex., Galveston.—Prudential Development Co., capital \$10,000, incptd. by S. Dearinger, A. K. Jones, B. Cowell and J. A. Hawkins; will develop 150 acres.

Tex., Humble.—General Oil & Fuel Co. incorporated to further develop oil well at Humble; W. M. Gunstream of Orange, Tex., is interested.

Tex., Marlin.—Marlin Oil & Gas Co., capital \$60,000, incptd. by S. A. Patterson, J. W. Torbett, T. A. Cheeves and others.

Tex., Port Arthur—Gas Plant.—Port Arthur Gas & Power Co., capital \$25,000, incptd. by J. S. Connelly, S. B. Redmond and Edward S. Ellis.

Tex., San Antonio—Oil Stills.—Dixie Oil & Refining Co., Elliott Jones, V.P. and Gen. Mgr., will erect 1000-bbl. crude-oil still and condenser for same; also 500-bbl. steam still and condenser.

Tex., Victoria.—Green Lake Oil & Gas Co., capital \$30,000, incptd. by F. M. Todd, J. B. Harper and C. S. E. Holland.

Tex., Wichita Falls—Oil Refinery.—Roy B. Jones, Wichita Falls, Oklahoma City, and associates plan to construct refinery with daily capacity 1000 bbls. oil.

W. Va., Birch Run.—Chalmers Oil & Gas Co. plans issuing \$150,000 preferred stock for further developments in Clay county, W. Va., and Wayne county, Ky., controls 820 acres gas and oil land, including 14 producing wells; office at 1517 Munsey Bldg., Baltimore.

W. Va., Fairmont.—Monongahela Valley Traction Co. submitted offer for purchase of Fairmont Gas Co. at \$2,933,973; accepted by directors, who have called stockholders' meeting for Nov. 24 to ratify sale; properties include large acreage of gas land, gas wells, mains, etc., for distributing natural gas; will continue developments; has leased 450 acres near Cross-Roads and will drill well for war purposes.

Okl., Okmulgee—Structural and Iron Works.—United Structural and Iron Works, capital \$50,000, incptd. by J. F. A. Deck, C. M. Roberts and M. Luster.

Okl., Okmulgee—Mowers.—Turner Mower Co., capital \$20,000, incptd. by A. F. Boone, J. B. Turner and Harlan Read.

Va., Newport News—Shrapnel and Shells—A. P. Gilbert, machinist agent, is reported as proposing organization of company to build plant for manufacturing 750,000 explosive shells for war purposes.

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W. Va., Morgantown—Gas System.—Factory Gas Co., capital \$200,000, incptd. by Jos. H. McDermott, D. C. Reay, E. M. Grant and others.

W. Va., Parkersburg—Youghiogheny Oil Co., capital \$20,000, incptd. by W. M. Miller of Parkersburg, D. C. Custer, H. L. Wolfe, W. W. Savage and Clarence V. Guard, all of Friendsville, W. Va.

ICE AND COLD-STORAGE PLANTS

Ark., Yellville.—Yellville Light, Ice & Power Co. organized by W. C. Stephenson of Marshall, Ark.; contemplates installing ice plant; lately noted. (See Electric Plants.)

W. Va., Huntington—Wrapping Machines—S. R. Dawson of Progressive Mfg. Co., Wheeling, W. Va., proposes to build plant for manufacturing wrapping machines.

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W. Va., Huntington—Wrapping Machines—S. R. Dawson of Progressive Mfg

MINING

Ala., Ashland—Graphite.—Southern Graphite Co., G. A. Mattison, Prest., and Treas., and S. D. Cowden, Secy., will develop 80 acres; daily capacity 125 tons crude oil; will install crushing and separating machinery; lately noted. (See Machinery Wanted—Pipe; Electrical Motors.)

Ark., Leslie.—W. E. Hancock, R. L. Hancock, W. G. Rasback and W. C. East of Oklahoma City, Okla., leased mining property; will install machinery, including boiler, steam drill, mill and crusher.

Ark., Mountain Home.—R. C. Love of Mountain Home and others leased property of Middle Fork Mining Co. in Baxter county and plan development.

Ark., Mountain Home—Lead.—White River Mining Co. organized by Ewing Powell of Little Rock, W. M. Hogue and Ed. Hogue of Cotter, Ark.; H. L. Hix of Melbourne, Ark., and others.

Ark., Sharp County—Zinc.—Percy Finch, Batesville, Ark., is reported as to develop 10 zinc mines.

Ark., St. Joe—Silicate.—C. Cox is reported as contemplating development of silicate mines.

Ark., St. Joe—Zinc.—W. P. Campbell is having plans prepared for concentrating plant for zinc mine.

Ark., St. Joe.—A. O. M. Mining & Milling Co., capital \$50,000, incptd. by W. M. Clay of Neosho, Mo.; W. L. Clay, C. S. King and others, all of Drumright, Okla.

Fla., Bartow—Phosphate.—Polk County Land Co. incptd. by W. W. Clark, T. L. Wilson, F. R. McConnell and others.

Ga., Macon—Kaolin.—W. H. Simmons of Maynard & Simmons will develop kaolin mines.

Ky., Louisville—Silica.—Kentucky Silica Co. increased capital stock from \$6000 to \$10,000.

Md., Pinesburg, R. D. from Williamsport—Stone and Lime.—Potomac Valley Stone & Lime Co. reported to have leased plant to Pittsburgh (Pa.) company and to install machinery, including tipples and trackage to provide for daily output of 30 carloads stone.

Mo., Galena—Lead and Zinc.—Francis Leonard, Lue Winters and others of Pittsburgh, Pa., are reported to build 200-ton concentrating plant.

Mo., Joplin—Lead and Zinc.—Old Virginia Mining Co., capital \$100,000, incptd. by J. F. Dexter, A. J. Beasley and W. S. Estis of Joplin, and Clad James of Webb City, Mo.

Mo., Kansas City—Lead and Zinc.—Dick Turpin Mining Co., capital \$48,000, incptd. by O. W. Sparks, W. F. Scott and C. R. Strong.

Mo., Miami—Lead and Zinc.—Walte H. Squier of Omaha, Neb.; F. C. Bagley of Lincoln, Neb.; Dr. C. A. Phillips and Thos. Madgett of Hastings, Neb., acquired lease of Madgett land, about 5 mi. northwest of Miami, and will develop.

Mo., Webb City—Lead and Zinc.—Fremont Mining & Milling Co. organized; will develop 140 acres; Jacob Dick, Prest.; A. E. Culbert, Fremont, O., V.-P.; S. W. Bates, Secy.-Treas.; B. M. Inman, Mgr. (Lately noted incptd., capital \$75,000.)

Oka., Miami—Golden Sheaf Mining Co., capital \$25,000, incptd. by W. N. Hayes and W. A. Ledbetter of Oklahoma City, John G. Lindsay of Norman, Okla., and T. L. Myers of Kansas City, Mo.

Oka., Spavinaw—Granite.—Spavinaw Red Granite Co., Vinita, Okla. (lately noted incptd., capital \$50,000), organized; Dr. F. L. Hughson, Prest.; Geo. A. Miller, V.-P.; Joseph A. Gill, Secy.-Treas.; will develop 80 acres. (See Machinery Wanted—Quarrying (Granite) Machinery.)

Tex., Riverton—Sulphur.—W. A. Doyle of Dallas, Tex., is reported to develop sulphur deposits.

Tex., Rustlers Springs—Sulphur.—Fenton Danny and others, El Paso, Tex., reported to develop sulphur deposits.

Va., Wythe County—Iron.—J. R. Shortt of Wytheville, Va., is reported to develop iron ore deposits.

MISCELLANEOUS CONSTRUCTION

Fla., Gulfport—Pier.—City voted \$1000 bonds to construct pier. Address The Mayor. (Noted in August.)

La., New Orleans—Revetment, etc.—Levee

Comms. of New Orleans Levee Dist., Leigh Carroll, Prest., Suite 201 New Court Bldg., invite bids until Nov. 2 to construct follow-up: Work in Fifth Dist., Orleans Parish: Canal St. Ferry to Algiers Saw Mill, restoring wave wash and repairing about 200 sq. yds. reinforced concrete revetment; Southern Pacific R. R. terminal to Naval Station, construction of wooden pecky cypress revetment, about 19,000 ft. B. M. length 700 ft.; U. S. Naval Station to U. S. Immigration Station, enlarging and dressing river slope, reinforced concrete facing and toe wall, about 600 cu. yds. earth in embankment and 1100 cu. yds. in fill and 7400 sq. yds. reinforced concrete; U. S. Immigration Station to Huguet, restoring wave wash and construction of wooden pecky cypress revetment, 5400 cu. yds. earth in embankment, 5900 ft. B. M. in cut and 212,000 cu. yds. in revetment, etc. (See Machinery Wanted—Revetment, etc.)

La., New Orleans—Levee Work.—State Bd. of Engrs. let following contracts for levee work: A. G. Thomas, levee from Happy Jack to Butler; General Contracting Co., \$33,000 cu. yds.; Hercules Land Co., 2 sections of 85,000 cu. yds. and 90,500 cu. yds., respectively.

Miss., Waveland—Seawall.—Seawall Comms. of Dist. No. 1, Hancock county, Chas. G. Moreau, Prest., Bay St. Louis, Miss., receive bids until Dec. 1 at office of Robt. L. Genin, Main St., Bay St. Louis, to construct concrete seawall and filling of same (bids to be submitted separately or jointly) on beach front of Waveland from Bay St. Louis-Waveland dividing line to northeast line of Waveland Terrace; wall to be not less than 7500 ft. long or more than 8000 ft. long. (See Machinery Wanted—Seawall Construction.)

Mo., St. Louis—Docks, etc.—St. Louis Ry. & Dock Co. has not completed details of plans for construction of docks and operation of barges on Mississippi River; Wm. J. Holbrook is Prest.; John T. Moore, V.-P.; John Hill, Treas.; E. W. Banister, Secy. and Counsel. (In July noted incptd. with capital \$25,000.)

Tenn., Chattanooga—Dock, etc.—City, Jesse M. Littleton, Mayor, will retain engineer to make plans for enlargement of wharf facilities, noted to be undertaken upon sale of \$100,000 bonds; as proposed, construction will include granite block paving on large area river front, erection of fireproof warehouse and installation of floating dock with electric cranes and elevators.

Tex., Port Arthur—Levees, etc.—City has received report from J. F. Coleman, Const. Engr., 920 Hibernia Bldg., New Orleans, La., on construction of system of levees and drainage canals; report considers 3 plans, differing only in manner of pumping water—by steam, electricity or internal-combustion engines; levee system to be 9 ft. above low tide; cost, an condition that railways raise their grade to required level, varies from \$111,760 for electrically-driven pump to \$125,785 for steam-driven pump. (Mr. Coleman lately noted as having retained to make surveys and submit plans and estimates.)

Va., Norfolk—Dredging.—Bureau of Yards and Docks, Washington, D. C., let contract Conwise Dredging Co., National Bank of Commerce Bldg., Norfolk, at \$140,000 to dredge between 700,000 and 800,000 cu. yds. at Norfolk Navy-yard. (Call for bids lately noted.)

MISCELLANEOUS ENTERPRISES

Ala., Birmingham—Store Fixtures.—Southern Store Fixture & Supply Co., capital \$6000, incptd.; Geo. N. Dobson, Prest.; Jas. M. Arnold, V.-P.; W. A. Dawson, Secy.-Treas.

Ala., Mobile—Hardware.—Wagner Hamilton Hardware Co., incptd. with H. O. Wagner, Prest.; J. M. Vanheuvel, V.-P.; J. L. Hamilton, Secy.-Treas.

Fla., Miami—Plumbing.—Scott Quinn Plumbing Co. established by F. B. Scott and John J. Quinn to conduct wholesale and retail plumbing business. (See Machinery Wanted.)

Ga., Augusta—Publishing.—Georgia Baptist Publishing Co., capital \$2000, incptd. by C. T. Walker, T. J. Walker, W. S. Hornsby, W. W. Jones and others.

Ga., Macon—Construction.—Preston-Small Construction Co., capital stock \$50,000, incorporated by C. M. Preston and A. T. Small to contract for constructing buildings, bridges, water-works, etc.

Ky., Louisville—Bottlers' Supplies.—Kentucky Bottlers' Supply Co., capital \$10,000, incptd. by W. D. L. D. and E. C. Roy.

Miss., Gulfport—Steamship Line.—Lumber Exporters' Line, initial capital \$100,000, organized; Prest., Harry Plaggio, Gulfport; V.-P., Geo. D. Burgess of Russel & Burgess, Memphis, Tenn.; among incorporators are W. T. Stewart, V.-P. and Gen. Mgr. of Gulf & Ship Island Ry., Gulfport; J. W. Summerville of Hunter, Bean & Co., Gulfport and Mobile, and A. L. Staples, V.-P. of Bank of Mobile, Mobile, Ala.; to operate steamship service for exporting Southern hardwood lumber to Europe; plans to utilize 60 per cent. of vessel space for lumber and 40 per cent. for heavier product; Gulfport and Mobile to be home ports; at first send ships to London, Liverpool and Genoa; later to other ports.

S. C., Columbia—Printing.—DuPre Printing Co., capital \$7000, incptd. by E. C. DuPre and C. S. Monteith.

Tex., Lubbock—Grain Elevator.—Lubbock Grain & Coal Co. (partnership including W. K. Dickinson, Sr., T. P. Gibson and J. D. Quirk) let lately-noted contract for erection of grain elevator to White Star Co., Wichita, Kans.; cost about \$4000; 11,000 bus. capacity; studded ironclad; handle country run maize, kafir, feterita caneseed and millet seed, and make chops.

Tex., San Antonio—Cattle Ranch.—La Salle Cattle Ranch Co., capital \$150,000, incptd. by W. T. McCampbell, Jos. L. Hill and H. C. King, Jr.

Va., Alexandria—Water Bottling.—New Paradise Springs Corp., capital \$50,000, chartered; M. Lynch, Prest.; G. Raymond Ratcliffe, Secy., both of Manassas, Va.

Va., Newport News—Building Material.—J. B. Johnson Co., capital \$15,000, incptd.; J. E. Warren, Prest.; Frank R. Bartlett, Secy.

Va., Newport News—Steam Ferry.—Chesapeake Ferry Co. will construct ferry houses and slip at municipal boat harbor; expend \$10,000; has let contract; will abandon present landing.

W. Va., Bluefield—Laundry.—Sanitary Laundry, J. H. Carter, Mgr., will build steam laundry; 42x126 ft.; 3 stories.

W. Va., Huntington—Transfer and Storage.—Huntington Transfer & Storage Co., capital \$10,000, incptd. by Wm. Bess, C. J. Bailey, Frank Kirk and others.

MISCELLANEOUS FACTORIES

Ala., Cullman—Brakes.—Derailment Brake Co., capital \$2000, incptd. by Wilbur E. Methvin, Eron B. Wallace and others.

Ala., Florence—Films.—Allentown Film Corp., capital \$100,000, chartered with M. F. Sherfesee, Prest., San Antonio, Tex.; Fred Stellar, V.-P., Birmingham, Ala.; H. C. Bennett, Secy.-Treas., Birmingham, Ala.; will establish plant to manufacture films and accessories.

Ala., Opelika—Peanut Oil.—C. M. Jernigan of Alabama Oil & Guano Co. may install equipment for manufacturing peanut oil. (See Machinery Wanted—Oil-mill Machinery.)

Ark., Stephens—Telephone Toll Registers.—National Telephone Co., capital \$100,000, incorporated; J. W. McClellan, Prest.; F. E. Lee, V.-P.; G. N. Cannon, Secy.

Fla., Apopka—Insecticide, etc.—Florida Insecticide & Fungicide Co., J. G. Grossenbacher, Plymouth, Fla., interested, will erect lately-noted plant; 20x35-ft. \$500 building; install 15 to 20 H. P. boiler and 4 H. P. gasoline engine; manufacture miscible oil and lime sulphur sprays. (See Machinery Wanted—Barrels (Wood); Cans (Tin); Soap.)

Fla., Tampa—Ice Cream.—Velvet Ice Cream Co., M. Henry Cohen, Prest. (lately noted incptd., capital \$10,000), leased fireproof building; will install ice-cream manufacturing machinery, cost \$3000 to \$5000; daily estimated capacity 1000 gals.; no bids.

Fla., Ocala—Soap.—R. L. Lang Soap Co. organized by R. L. Lang and others to establish soap factory. (See Machinery Wanted—Soap.)

Ga., Augusta—Creamery.—J. E. Greene, care Merchants and Manufacturers Assn., plans to secure establishment of creamery.

Ky., Louisville—Automobile Tires, etc.—Kentucky Tire & Rubber Co., capital stock \$50,000, incptd. by F. A. Jack, E. J. Bacon and Ellerbe W. Carter.

Ky., Louisville—Candy.—Ideal Candy Co., 535 W. Market St. (lately noted incptd., capital \$5000), continues manufacture of chocolates and pure sugar candies; Frank P. Manninghoff, Prest.; Otto J. Rossfeld, V.-P.; Thos. J. Sullivan, Secy.-Mgr.; Fred T. Howard, Treas.

Ky., Owensboro—Overalls, etc.—Jas. H. Hickman, Mayor, plans establishment of factory for overalls and trousers; proposes investment of \$6000 for installing machinery, etc.

Md., Baltimore—Shirts.—Oppenheim, Oberdorf & Co., 112-124 W. Fayette St., leased about 2 acres space in Coca-Cola Bldg., and will equip to manufacture shirts.

Md., Baltimore—Feldspar Products.—Jas. Thompson, 18 W. Pratt St., will build plant to manufacture feldspar products; has purchased some machinery.

Md., Baltimore—Chemicals.—John R. Banks, Mining Engr., 61 Broadway, New York, interested in plan to establish chemical factory; writes to Manufacturers Record that this enterprise is "tentative and has not yet assumed definite shape."

Miss., Columbia—Turpentine.—Great Southern Lumber Co., Bogalusa, La., is reported to build turpentine plant about 4 mi. from Columbia.

Mo., Kansas City—Road-building Machinery.—Firman L. Carswell Mfg. Co., 227 Fairmount Ave. (lately noted incptd., capital \$10,000), organized; Firman L. Carswell, Prest. and Mgr.; Arthur Hobson, V.-P.; A. L. Beach, Secy.; manufacture road-building machinery.

Mo., St. Louis—McKenzie Mfg. Co., capital \$48,000, incptd. by Benjamin McKenzie, J. R. Horstmann and W. Dunny Reese.

Mo., St. Louis—Tents and Awnings.—Louis Tent & Awning Co., capital \$50,000, chartered; M. Lynch, Prest.; G. Raymond Ratcliffe, Secy., both of Manassas, Va.

Mo., St. Louis—Rifles.—C. M. Pearson, Granite Bldg., is reported as proposing to establish plant to manufacture war rifles for Europe; plans said to involve organization of company to install lathes and other machinery obtained from various St. Louis machine shops whose owners will share in first order for \$20,000,000 worth of rifles.

Mo., St. Louis—Laboratory.—Lyutes Pharmacy Co. let contract Gamble Construction Co. of St. Louis to build laboratory at 426 Lacledie Ave.; 150x100 ft.; 2 stories; reinforced concrete; stucco exterior; steel windows with wired glass; sprinkler system; steam heating plant; freight elevators; cost \$50,000; F. C. Bonsack, Archt., St. Louis.

Mo., St. Louis—T. D. Davis Mfg. Co., capital \$30,000, incptd. by T. D. Davis, Harvey E. Brown, Geo. H. Allan and others.

N. C., Durham—Creamery.—Warren Creamery Co., capital \$25,000, incptd. by E. G. Peebles, Julie B. Warren and Geo. L. Carrigan.

N. C., Durham—Chero-Cola.—Florence Chero-Cola Bottling Co., capital stock \$25,000, incptd. by Perry Moses, Jr., and Eugene H. Moses; has bottling plant at Durham and at Sumter, Georgetown, Kingstree, these 3 in South Carolina.

Okl., Tulsa—Window Glass.—Enterprise Window Glass Co., capital \$100,000, incptd. by M. E. Utterback and J. R. Utterback of Tulsa and W. T. Utterback of Binger, Okla.

S. C., Charleston—Vulcanizing.—Charleston Vulcanizing Co., capital \$1500, incptd. by J. F. Redding and B. B. Johnson.

S. C., Florence—Bottling.—Florence Chero-Cola Bottling Co., capital \$25,000, incptd. by Perry Moses, Jr., and Eugene H. Moses.

S. C., Spartanburg—Creamery.—W. W. Long, State Farm Demonstration Agent, Clemson College, S. C., is interested in plan to organize company with \$5000 capital to install creamery.

S. C., Spartanburg—Screens.—J. L. Bolton, care of Bennett's Hotel, contemplates establishment of factory to make door and window screens. (See Machinery Wanted—Woodworking Machinery, etc.)

Tenn., Concord—Lime.—Concord Lime Co., capital \$15,000, incptd. by J. W. Miles, E. Scott Miles, John D. Hyder and J. S. Lynch.

Tenn., Nashville—Food.—Pickard Food Co., capital \$20,000, incptd. by W. B. Pickard, John M. Pickard, L. F. Fuston, Sumner Fuston and W. H. Draughon.

Tex., Ballinger—Milk Producer.—Blasdell Milk Producer Co., capital \$5000, incptd. by J. W. Blasdell, H. L. Armstrong and W. F. Whitaker.

Tex., El Paso—Refrigerators.—Texas Furniture & Refrigerator Co., Fort Worth, Tex., is reported as contemplating erection of plant.

Tex., Mexia—Glass.—Mexia Glass Works (Commercial Club) will build factory; 4 buildings, main building to be 300x500 ft.; reinforced concrete construction; construct liquid tank, 23x85 ft. and 15 ft. deep, of German field clay, costing \$27,000; plant will consume 1,500 tons of sand daily.

October 28, 1915.]

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consume 1,500,000 cu. ft. gas daily; total estimated cost \$75,000. (Lately noted.)

Va., Norfolk—Peanuts.—Bosman & Lohman Co. let contract to Main & Barber Co. to erect 2-story 35x60-ft. building adjoining present plant; addition for grinding peanut hulls; cost \$4000; brick and cement; concrete and tar roofing; concrete floor; hand elevator; all materials supplied.

Va., Richmond—Cigarettes.—British-American Tobacco Co. will install machinery (in Export Leaf Tobacco Co.'s warehouse) to manufacture cigarettes.

Va., Roanoke—Overalls.—Merchants' Mfg. Co., capital \$60,000, Incptd. with E. M. Herington, Pres.; John T. Barnes, V.-P.; Edward G. Sanders, Secy.-Treas.; plans to acquire and enlarge plant of Roanoke Overalls Co.

W. Va., Beckley—Bakery.—Spalding Baking Co., capital \$10,000, Incptd. by G. S. Spalding, S. S. Sutphin, W. H. Rardin and others, all of Mabscott, W. Va.

W. Va., Huntington—Bakery.—Stroehmann's Vienna Bakery, Wheeling, W. Va.

Fred G. Stroehmann, Pres., will build late-

ly-noted bakery; open bids about Nov. 7 on

9x120-ft. structure; open machinery bids

about Feb. 1; make bread, cakes and pies;

plans by Cooley Co., Pittsburgh. (See Ma-

chinery Wanted—Bakery Equipment.)

MOTORS AND GARAGES

Ala., Birmingham—Automobiles.—DeShazo Motor Co., capital \$2500, Incptd.; A. C. DeShazo, Pres.; W. F. DeShazo, V.-P.; Man-

and DeShazo, Secy.-Treas.

Ala., Carrollton—Garage.—Picken County Auto Co. will erect garage; width 50 ft.; brick.

Ark., Fort Smith—Automobiles, etc.—Fort Smith Auto Repair Co., 8-10 N. 12th St., lately noted Incptd., capital \$25,000, purchased machinery for automobile and battery repair shop; has building; Chas. Kruskopp, Pres.; John W. Vaile, Mgr.

Md., Baltimore—Garage.—Crystal Ice Co., North Ave. and Chester St., will build garage on Chester St.; 1 story; fireproof; 80x40 ft.; plans by Dietrich Bros., Pleasant and Davis Sts.

Miss., Magnolia—Garage.—Magnolia Plumb-

ing & Sheet Metal Works will erect garage.

Mo., St. Louis—Automobiles, etc.—Enger Auto & Supply Co., capital \$5000, Incptd. by Eugene Meyer, Albert W. Albrecht and others.

Mo., St. Louis—Garage.—Mrs. Allen Baker will erect building at 3511-3621 Forest Park Blvd. to be occupied by Federal Truck Co.; building will be fireproof; 150x182 ft.; 1 story; 27,000 sq. ft. floor space; cost, including site, \$37,500.

N. C., Charlotte—Automobiles.—Autens Auto Hire, capital \$10,000, Incptd. by R. G. Auten, F. E. Harlan and R. B. Hancock.

N. C., Waynesville—Automobiles.—Waynesville Motor Co., capital \$5000, Incptd. by D. C. Shaw, J. A. Richburg and C. G. Logan.

Tex., Dallas—Automobiles.—Chevrolet Motor Co., capital \$5000, Incptd. by W. S. Ballinger, A. B. C. Hardy and John H. Stearns.

Tex., Dallas—Wichita Falls Motor Co., Wichita Falls, Tex., will establish plant; J. W. Felix, local representative.

Tex., Waco—Garage.—Pio Crespi will erect building; 60x125 ft.; 2 stories; brick; lower floor for garage; upper floor to be occupied by Crespi & Co.

Va., Norfolk—Garage.—J. Johnson is lowest bidder at \$11,499 to erect garage for F. A. Roethke and A. W. Kemp for heating plant; structure will be of brick and steel construction; triangular shape, 90x107x84 ft.; brick trimmings; steel sash; offices, showrooms and storage rooms on first floor; repair shop on second floor; elevator; plans by Herbert W. Simpson, who will supervise construction; let contract for piling to J. Johnson. (Lately noted.)

Va., Portsmouth—Garage.—Dr. R. R. Robertson will erect brick building to cost \$200; ground floor for garage; second floor for assembly hall.

Va., Richmond—Automobiles.—Standard Motor Co., capital \$25,000, Incptd.; E. J. Prestatt, Pres.; C. F. Blanton, Secy.-Treas., both of Big Stone Gap, Va.

W. Va., Welch.—J. J. Rhodes, J. Frank Johnson and Sam Polson will erect hotel addition to include portion for garage lately mentioned; 3 stories and basement; 90x30 ft.; concrete and brick; basement for garage; first floor for automobile-display rooms; cost 15,000\$; A. F. Wysong, Arch., Princeton, W. Va. (See Buildings Pro- posed—Hotels.)

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Tenn., Jackson—Illinois Central R. R. Co., A. S. Baldwin, Ch. Engr., Chicago, will make lately-noted improvements, comprising enlargement of present facilities for handling heavier motive power equipment; includes construction of 10-stall frame roundhouse, turntable, water tank and power plant equipment.

W. Va., Peachtree.—Chesapeake & Ohio Ry., F. I. Cabell, Ch. Engr., Richmond, Va., will build 6-stall roundhouse.

ROAD AND STREET WORK

Ala., Bay Minette.—Baldwin county contemplates voting on \$55,000 bonds to construct its portion of Mobile-Baldwin counties highway and ferry across Tensaw River. (See Ala., Mobile.)

Ala., Dothan.—Houston County Board of Revenue, A. C. Crawford, Chrmn., will construct 21 mi. road from Dothan to Granger via four towns; 10 mi. road from Dothan to Webb; 11 mi. road from Ashford to Gordon via 2 towns; bids until Nov. 18; plans, specifications, etc., obtainable from County Engr. (See Machinery Wanted—Road Construction.)

Ala., Gadsden.—Etowah county let contract J. W. Gilbert at \$4991 to construct Steel Station Rd.; contract cal's for grading and draining 6 mi. of road, removal of 15,000 cu. yds. earth, 200 cu. yds. rock and 180 cu. yds. plain and reinforced concrete construction.

Ala., Mobile.—Committee submitted plan to Alabama & Mississippi Gulf Coast Highway Assn. for connecting by highway Baldwin and Mobile counties, to include bridges and ferries; proposed that Mobile county build necessary ferry over Mobile River and construct highway in Mobile county, and that Baldwin county build necessary ferry over Tensaw River and construct section of highway in Baldwin county; also proposed that both counties build jointly bridge over Spanish River; total estimated cost \$105,000; Baldwin county contemplates voting on \$55,000 bonds to construct its portion of work.

Ala., Vernon.—Lamar County Commrs. let contract G. B. Edgar, Vernon, to construct road from Sulligent to Marion county line, about 18 mi.

Ark., Conway.—Comms. Dist. No. 4 let contract R. B. McCulloch and J. H. Halter of Conway for 15,000 sq. yds. concrete pavement.

Fla., Bartow.—Polk county, J. A. Johnson, Chk., County Commrs., will not call lately-noted election on \$1,000,000 bonds before March; in meantime will have reports from engineers, who will survey the 212 mi. of road, and will then receive bids from contractors before voting bonds.

Fla., Fort Myers.—Lee County Commrs. let contract C. W. Carlton, M. B. Davis and W. C. Hill to clear, grub and grade Fort Myers-Marco Rd.; also to W. R. Wallace Co. to clear, grub and grade Fort Myers-Naples Rd.; latter contract divided into two sections of 22.35 mi. and 28.1 mi., respectively.

Fla., Gulfport.—City voted \$9000 bonds to construct sand-asphalt streets. Address The Mayor. (Noted in Aug.)

Fla., Miami.—Dade county voted \$275,000 bonds to construct county's part of Tamiami Trail, \$25,000 being for road on 20th St. route and \$25,000 for road up Miami Canal through Hope City to Broward county line. Address County Commrs. (Noted in Sept.)

Fla., Miami.—City will grade and pave with asphaltic concrete and binder course on concrete foundation about 15,000 sq. yds. streets; also grade and pave with sand and asphaltic oil about 100,000 sq. yds. streets; City Council receives bids at office of W. B. Moore, City Clerk, until Nov. 8. (See Ma-

chinery Wanted—Paving.)

Fla., Pensacola.—Escambia county votes Feb. 1 on \$1,000,000 bonds to construct hard-surface roads and concrete and steel bridges. Address County Commrs.

Fla., Tampa.—City let contract Cornwell Construction Co. of Tampa to construct 50,000 lin. ft. concrete curbing. (Call for bids lately noted.)

Fla., Tampa.—City will construct sheet cement sidewalks; Board of Public Works, D. B. McKay, Chrmn., receives bids until Nov. 2. (See Machinery Wanted—Paving.)

Fla., Wauchula.—City let contract Alabama Paving Co., American Trust Bldg., Birmingham, Ala., to construct 10,000 to 12,000 sq. yds. brick paving.

Ky., Catlettsburg.—Boyd County Commrs. will expend \$75,000 for road construction, \$65,000 being for paving road between Ash-

land and Greenup county line and road between Catlettsburg and Clydeside Park.

Ky., Crittenden.—City defeated bonds to improve streets. (Lately noted.)

Ky., Lexington.—S. R. Muir let contract C. H. Daugherty to construct 2000 ft. concrete sidewalks on east side Walton Ave.

Ky., Lexington.—F. A. Bullock let contract C. H. Daugherty to construct about 4000 ft. concrete sidewalks on east side Walton Ave.; width 4 ft.

Ky., Louisville.—Jefferson County Fiscal Court voted to expend \$7400 on emergency road work.

Ky., Morganfield.—Union County Commrs. will construct Uniontown and Boxbill Rd., 7½ miles.

Ky., Crowley.—Acadia parish contemplates constructing 150 mi. gravel roads; plans call for two 18-ft. roads extending north and south and two east and west, with necessary lateral; estimated cost \$750,000.

Ky., Donaldsonville.—Ascension Parish, First Rond Dist., voted \$15,000 bonds to extend gravel road paralleling river for 5 mi. and to levy special tax to maintain and repair gravel roads totaling about 26 mi. Adolph Netter, Prest. Police Jury. (Lately noted.)

Ky., Donaldsonville.—Ascension Parish, Road Dist. No. 2, voted \$50,000 bonds to construct gravel road from Iberville Parish to St. James Parish line on river front and from Gelsmar on river to Hope Villa, connecting at latter place with model road into Baton Rouge; Adolph Netter, Prest. Police Jury. (Lately noted.)

Ky., Monroe.—City will place about 37,000 sq. yds. gravel with tarvia top, 24,800 lin. ft. curb and gutter, etc., on various streets; D. W. Faulk, City Secy., invites bids until Nov. 5.

Ky., New Orleans.—City Commission Council considering ordinances specifying material and award of contracts for \$1,500,000 expenditure for paving 42 streets; mostly bituminous and wood block; bids already advertised; construction to begin after Jan. 1; W. J. Hardie, City Engr. (Various bids, etc., heretofore reported.)

Ky., Baltimore.—Municipal Paving Com., R. Keith Compton, Chrmn., has tentative list of 41 streets, 15 mi., for paving during 1916; will pave mainly with asphalt; determine details and invite bids from time to time.

Ky., Cumberland.—City will grade, curb and pave Oldtown Rd. from Maryland Ave. to South St.; Mayor and City Council receive bids until Oct. 25; Jas. P. Gaffney, City Engr. (See Machinery Wanted—Paving.)

Ky., Easton.—Talbot County Commrs., Jos. B. Harrington, Chk., receives bids until Nov. 9 for constructing section of State-aid highway as follows: Contract No. 359, 2.18 mi., from Trappe to Barber, shell construction; No. 360, 1 mi., from Bruceville to Windy Hill, shell construction; No. 361, 3 mi. from Easton toward Mathews, shell or macadam or concrete construction; No. 401, 1.06 mi., from Easton to Easton Point, shell or macadam or concrete construction; blank forms, etc., at State Roads Com., 601 Garrett Bldg., Baltimore. (See Machinery Wanted—Road Construction.)

Ky., Hagerstown.—Washington county will construct 1.14 mi. State-aid highway upon or along road from Rohrersville toward Boonsboro; also 1.05 mi. from McCreys Hill toward Mooretown; County Commrs. receive bids until Nov. 4; Barry M. Hartle, Clerk County Commrs. (See Machinery Wanted—Road Construction.)

Ky., Salisbury.—Wicomico county let contract Junia Paving Co., 410 Empire Bldg., Philadelphia, Pa., at \$13,035 to construct 2 mi. oyster-shell-macadam road; work includes 175 cu. yds. excavation 13 cu. yds. concrete masonry, 18,918 sq. yds. oyster-shell-macadam, 24 ft. 12-in. corrugated-iron pipe and 120 ft. 4-in. vitrified terra-cotta pipe under drain; H. M. Clark, Roads Engr. (Call for bids lately noted.)

Ky., Ackerman.—City will construct concrete sidewalks; let contract W. L. Damon of Okolona, Miss., at about \$25,000.

Ky., Brookhaven.—Lincoln County Dist. No. 1 will construct 2 mi. gravel roads—1 mi. on Topsay Rd. and 1 mi. on Summit Rd. Address County Commrs.

Ky., Greenwood.—Leflore County Supvrs. will issue bonds to construct roads in Dists. Nos. 1 and 2.

Ky., Jackson.—City let contract C. T. Talbot to cover and bind 2 mi. of Rankin Pike.

Ky., Pass Christian.—Joint Aldermanic-Citizens' Committee, J. M. McGathery, will cover and bind 2 mi. of Rankin Pike.

Ky., Corsicana.—City will pave sections of N. Beaton St., E. 5th Ave. and W. 7th Ave.:

Chrmn., received report from Xavier A. Kramer, Consit. Engr., Magnolia, Miss., on municipal improvements; recommends street improvements, etc. (See Water-works.)

Ky., Revier.—City voted \$2500 bonds to improve streets. Address The Mayor.

Ky., Chillicothe.—C. A. Stewart is lowest bidder for paving Elm St. from 9th St. to Elmdale Rd.

Ky., Lexington.—Lafayette County, Wellington Special Road Dist., voted \$55,000 bonds to rock gap in Old Trails Rd. and to rebuild culverts and bridges. Address County Commissioners.

Ky., Marshall.—Saline county will vote on \$1,000 road bonds. Address County Commissioners.

Ky., St. Louis.—Davis Realty Develop- ment Co. will extend Williams, Maryland and Montclair Aves. and grade section of western part of Block 10, Maryland Terrace.

N. C., Ashboro.—Randolph County Commrs. and Randolph Highway Com. will construct road from Randale Township line to connect with High Point Rd. at Guilford county line in Archdale.

N. C., Asheville.—City will pave Beaumont St. from Hazzard to Miller St. and sidewalk on west side of Marjorie St. Address The Mayor.

N. C., Chimney Rock.—Dr. L. B. Morse, Hendersonville, N. C., will promote construction of 2½ mi. private toll automobile road to Chimney Rock; \$3000 available; Engr., R. W. Parker, Asheville, N. C.; construction superintended by Jas. Carver, foreman. (Lately noted under Hendersonville.)

N. C., Charlotte.—City will issue about \$17,000 bonds to construct 17,500 sq. yds. sidewalks, including 1½ mi. to North Charlotte and Belmont; width 6 ft.; will let contract Nov. 11. Address The Mayor.

N. C., Hickory.—City will grade and top soil Highland Ave. from 9th Ave. to 5th St. and construct concrete sidewalks on north side of street; open bids Nov. 2; 8. C. Cornwell, official in charge.

N. C., Rockingham.—Richmond county, B. F. Reynolds, County Clerk, will issue \$25,000 bonds for road improvements.

Okl., Claremore.—Rogers County Commrs. ordered elections in various townships to vote on bond issues for road construction: Nov. 6, Catoosa, \$18,000; Inola Township, \$20,000; Nov. 9, Collinsville, \$50,000; Oologah, \$20,000; Talala, \$20,000; Checota, \$50,000; Foyle, \$25,000; Owala, \$30,000; Verdigris, \$50,000.

Okl., Drumright.—City is considering paving of Broadway. Address The Mayor.

Okl., Lawton.—Dept. of Interior, Andrus A. Jones, First Asst. Secy., Washington, D. C., will grade Gore Blvd.; bids until Nov. 17. (See Machinery Wanted—Grading.)

machinery. (See Machinery Wanted—Woodworking Machinery.)

Tenn., Erwin—Automobile Spokes, etc.—Erod & Co., Columbia, Ky., purchased old electric-light plant building; will erect addition and install machinery to manufacture automobile spokes, singletrees and neckyokes; construction of buildings commenced; cost \$3000. (See Machinery Wanted—Woodworking Machinery, etc.)

FIRE DAMAGE

Ala., Jacksonville.—Girls' dormitory at Normal School; loss \$10,000.

D. C., Washington.—Bedell Mfg. Co.'s upper heating plant at 638 D St. N. W.; estimated loss \$10,000.

Fla., Jacksonville.—H. L. Sprinkle Distilling Co.'s warehouse, owned by Basnett estate; loss \$15,000.

Fla., Pablo Beach.—J. Atwater's residence; H. W. Harrington's residence.

Fla., Plant City.—Claude L. Brown's residence.

Fla., West Palm Beach.—G. D. Bryan's residence at Riviera; loss about \$3500.

Ga., Adel.—J. T. Pope's residence; loss \$5000.

Ga., Athens.—Lyric Moving-picture Theater, owned by McDowell Estate.

Ky., Hodgenville.—Jos. E. Walters' residence at Main and Depot Sts.

Ky., Somerset.—Newtonton Hotel, owned by Chas. Renner, Lawrenceburg, Ky.; loss \$125,000.

La., Alexandria.—Ruston Foundry & Machine Shops, Ltd., foundry building; estimated loss \$30,000.

La., Mansfield.—Mansfield Hardwood Lumber Co.'s mill; loss \$35,000.

Md., Baltimore.—Chas. Wiskow's stable and storage building at 4025 Frederick Ave., Irvington; loss \$3000.

Md., Raspburg.—Otto Hensel's residence at Kenwood Park, Belair Rd.; loss \$4000.

Miss., Guntown.—John F. Milam's residence near Guntown.

Mo., Adrian.—C. W. Boswell's hotel; loss \$9000.

Mo., Adrian.—Boswell Hotel, owned by Crawford Boswell; loss \$6000.

Mo., Bowling Green.—Christian church; loss \$7000. Address The Pastor.

Mo., Harlem.—W. M. Cade's building; loss \$4000.

N. C., Wilmington.—Causey Bros.' rosin plant; estimated loss \$10,000.

S. C., Andrews.—Carolina, Atlantic & Western Ry.'s depot; Wm. Moncure, Ch. Engr., Raleigh, N. C.

S. C., Easley.—John A. Robinson's store-room.

Tenn., Harriman.—Harriman Heading Co.'s drykiln; loss \$1500.

Tenn., Tracy City.—Henry Flury's store; loss \$8000; Victor Flury's store, loss \$7000; J. C. Sanders' building.

Tex., Quanah.—J. J. McAdams' residence; loss \$20,000.

Tex., Rosebud.—W. M. Hefley's residence, occupied by E. E. Green; loss \$3500.

Tex., San Angelo.—David Darst's residence; loss \$4800.

Va., Goshen.—McClintic & Snyder's store; Gosher Supply Co.'s store; old postoffice building; C. W. Price's residence; Dr. J. G. Leech's residence; Mrs. J. F. Guinn's residence; loss \$40,000 to \$50,000.

COLLAPSED

Va., Richmond.—Mayo Milling Co.'s warehouse at Byrd and 10th Sts., owned by Vaughan estate.

DAMAGED BY EXPLOSION

Ala., Mobile.—W. T. Hieronymus' sawmill; boiler explosion; reported loss \$3000.

WRECKED BY EXPLOSION

Tex., Lovelady.—Lang Smith's gin.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

Ala., Birmingham.—Mrs. W. L. Morris will erect store and apartment building. (See Stores.)

Ala., Montgomery.—R. L. Penick will erect apartment-house; 3 stories; 70x200 ft.; hollow tile construction; white stucco exterior; 9 suites of from 2 to 4 rooms and bath; cost \$30,000; plans in progress.

Fla., Jacksonville.—T. E. Floyd will erect apartment-house; 2 stories; frame; cost \$7000.

Ky., Lexington.—John V. Moore will erect apartment-house; 2 stories; 10 rooms; cost \$3000.

Md., Baltimore.—J. Charles Kemper, Pimlico Ave. and Ridgely Ave., will convert residence at Harford and Lafayette Aves. into apartment-house. (See Dwellings.)

Mo., Kansas City.—W. G. Wren will erect 6-apartment flat at 4126-28 Walnut St.; cost \$30,000.

Mo., St. Louis.—Louis Cella and James A. Curro will erect store and apartment building. (See Stores.)

Mo., St. Louis.—Vincent G. Mueller will erect 2 single flats of 4 and 5 rooms; cost about \$10,000.

Mo., St. Louis.—Samuel Liebert will erect double 3-room apartment.

Tenn., Columbia.—Frank G. Smith is having plans prepared for 65-room apartment building; 3 stories.

Tex., El Paso.—Perry-Kirkpatrick Co. is preparing plans for apartment-house and will also erect several bungalows.

Tex., El Paso.—Braunton & Leibert are preparing plans for apartment-house on E. Nevada St.; 12 suites; 3 stories; brick; cost \$25,000; owner's name withheld.

Tex., Houston.—Charles P. Jones will erect 2-story apartment-house at Main and Truxillo Sts.; frame and stucco; cost \$10,000.

Va., Hopewell.—Israel Silberstein, 612 Equitable Bldg., Baltimore, plans to erect buildings for stores and apartments, etc. (See Stores.)

Miss., Guntown.—John F. Milam's residence near Guntown.

Mo., Adrian.—C. W. Boswell's hotel; loss \$9000.

Mo., Adrian.—Boswell Hotel, owned by Crawford Boswell; loss \$6000.

Mo., Bowling Green.—Christian church; loss \$7000. Address The Pastor.

Mo., Harlem.—W. M. Cade's building; loss \$4000.

N. C., Wilmington.—Causey Bros.' rosin plant; estimated loss \$10,000.

S. C., Andrews.—Carolina, Atlantic & Western Ry.'s depot; Wm. Moncure, Ch. Engr., Raleigh, N. C.

S. C., Easley.—John A. Robinson's store-room.

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Tenn., Tracy City.—Henry Flury's store; loss \$8000; Victor Flury's store, loss \$7000; J. C. Sanders' building.

Tex., Quanah.—J. J. McAdams' residence; loss \$20,000.

Tex., Rosebud.—W. M. Hefley's residence, occupied by E. E. Green; loss \$3500.

Tex., San Angelo.—David Darst's residence; loss \$4800.

Va., Goshen.—McClintic & Snyder's store; Gosher Supply Co.'s store; old postoffice building; C. W. Price's residence; Dr. J. G. Leech's residence; Mrs. J. F. Guinn's residence; loss \$40,000 to \$50,000.

COLLAPSED

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DAMAGED BY EXPLOSION

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WRECKED BY EXPLOSION

Tex., Lovelady.—Lang Smith's gin.

BANK AND OFFICE

Ala., Attalla.—Hays Cooperage Co. will erect office building.

Ala., Huntsville.—Wm. T. Hutchens will erect office building.

Ala., Robertsdale.—Dr. R. A. Hall will erect store and office building. (See Stores.)

Ga., Savannah.—National Bank of Savannah temporarily postponed alterations to first floor and basement of building at Bull and Broughton Sts. at cost of about \$40,000; Dennis & Hiron, 355 5th Ave., New York, and H. W. Witcover, Savannah, Archts. (Previously noted.)

Mo., Kansas City.—Knights of Pythias will erect office, store and lodge building. (See Association and Fraternal.)

Mo., St. Louis.—Scullin Steel Co. will erect building for offices, etc. (See Miscellaneous.)

N. C., Asheville.—Mark W. Brown is reported to erect 16-room brick addition to building at 55 College St.; 54x40 ft.; lower floor for 2 stores; upper floor for offices; contract for grading let to Blackwell & Cranes.

Tex., Childress.—Childress Index will erect office and business building; plans in progress; brick.

Tex., El Paso.—Rio Grande Bank & Trust Co. is reported to erect building; 6 stories; steel; cost about \$150,000.

Tex., Galveston.—Galveston Cotton Exchange and Board of Trade will expend about \$10,000 to repair structure lately noted damaged by fire.

Tex., Quitman.—Farmers and Merchants' State Bank will erect bank and mercantile building; 40x80 ft.; brick; metal roof; concreted floors; cost \$4000. (Lately noted.)

CHURCHES

Ala., Hartselle.—First Church of Christ is having plans prepared by H. D. Breeding, 15 Watts Bldg., Birmingham, for building; stone; tile roof; steam heat; auditorium, Sunday-school rooms and classrooms; main auditorium to seat 400; cost \$15,000.

D. C., Washington.—Mount Pleasant M. E. Church South has plans by Speiden & Speiden, 1403 New York Ave. N. W., Washington, for building on 16th St.; exterior rough texture brick; main auditorium to seat 300; structure 70x52 ft.; cost about \$20,000.

Fla., Winter Haven.—First Baptist Church has plans by W. A. Rayfield & Co., Birmingham, for building; 50x70 ft.; brick; metal roof; wood floors; furnace; electric lights; cost \$18,000. Address Archts.

Ky., Lexington.—Epworth Methodist Church South, Rev. E. K. Arnold, Pastor, will erect building; brick and stone; old structure to be divided into Sunday-school rooms; completed plant to have 21 rooms and auditorium and balcony to seat 600.

Ky., Pineville.—Baptist Church, Rev. J. A. McCord, pastor, will erect building; 8 or 10 Sunday-school rooms and auditorium; brick; metal or wood shingle roof; furnace; electric wiring and fixtures; cost \$12,000 to \$15,000; construction to begin in spring. Address G. J. Jarliss, Chmn. of Bldg. Com.

La., New Orleans.—First Presbyterian Church, Rev. Geo. H. Cornelison, Jr., Pastor, will rebuild church lately damaged by storm; cost about \$25,000, exclusive of steeple and pipe organ; details not determined. Address W. B. Bloomfield, 207 N. Peters St., New Orleans.

Mo., Carthage.—First Presbyterian Church will erect building; cost \$40,000. Address The Pastor.

Mo., St. Charles.—Second Street Baptist Church will probably erect building. Address The Pastor.

Ola., Tulsa.—Catholic Church will erect school. (See Schools.)

Ola., Edmond.—Baptist Church, Rev. H. J. Riddings, pastor, will erect building; cost about \$7000.

Tenn., Memphis.—Church of which Rev. S. E. Griggs is pastor is having plans prepared by W. T. Bailey, 358 Beale Ave., Memphis, for building; 80x140 ft.; concrete foundation; brick walls; stone trimmings; tile or reinforced concrete partitions; cost \$50,000; contract let in January. Address architect.

Tex., Alpine.—First Baptist Church, Rev. Jas. T. Turt, Pastor, will erect lately-noted building; approximately 60x90 ft.; hollow tile faced or veneered with pressed brick; probably slate roof; wood floors; electric lights; plans not decided; cost \$15,000; hot-air heating plant \$600. Address The Pastor. (See Machinery Wanted—Heating Plant; Roofing; Windows and Columns; Pipe Organ.)

Tex., Dallas.—Second Avenue Baptist Church will erect Sunday-school rooms and addition to auditorium. Address The Pastor.

Tex., Dallas.—Temple Emanuel will proceed with erection of institutional portion of proposed \$125,000 temple; Hubbell & Green, Archts., Dallas.

Tex., Fort Worth.—Methodist Episcopal Church, Rev. J. L. Mahan, pastor, will erect building at 2800 May St.; 50x80 ft.; ordinary construction; asbestos roof; pine and oak inclined floor; steam heat; electric lights; cost \$10,000; date of opening bids not decided; W. A. Rayfield & Co., Archts., Birmingham, Ala., may be addressed.

Tex., Nacogdoches.—Christian Church will erect \$3000 building on N. Fredonia St. Address The Pastor.

Tex., Seymour.—First Baptist Church, Rev. O. W. Dean, pastor, has plans by C. W. Bulger & Son, Dallas, for lately-noted building at Washington & Morris Sts.; 81 ft. 10 in. by 88 ft. 4 in.; interlocking tile with face brick veneer; metal tiling roof; pine floors; electric lights; cost \$14,000; steam heat, \$800; day labor, with U. L. Graham, foreman. Address L. B. Donehoo, Chmn. Building Com., Seymour. (See Machinery Wanted—Heating.)

W. Va., Huntington.—Guyandotte M. E. Church South, Rev. C. D. Lear, Pastor, will improve building; construct front, basement story, etc.

W. Va., Welch.—Christian Church, T. A. Lambert, Chmn. Building Com., plans to erect building.

CITY AND COUNTY

D. C., Washington.—Convenience Station—Dist. Commrs. receive bids until Nov. 6 to remodel interior of Public Convenience Station No. 1, 7th St. and Pennsylvania Ave. N. W.; blank forms, specifications, etc., at office of Chief Clerk, Engr. Dept., Room 427 Dist. Bldg.

Miss., Pass Christian.—City Hall, etc.—Joint Aldermanic-Citizens Committee, J. M. McGathy, Chmn., received report from Xavier A. Kramer, Consult. Engr., Magnolia, Miss., on municipal improvements; recommends city hall, etc. (See Water-works.)

S. C., Sumter.—Library—City will erect Carnegie Library; brick; cost \$10,000; N. G. Walker, Archt., Rock Hill, S. C.; S. H. Edmunds, Supt. City Schools, Sumter. (Lately noted.)

Tex., Galveston.—Police Station and Engine-house.—City will remodel old city hall for police station and engine-house; C. D. Hill & Co., Archts., 317 22d St., Galveston.

Va., Richmond.—Police Station.—Police Board will proceed with erection of proposed Second station.

COURTHOUSES

Mo., Ozark.—Christian County Commrs. postponed election from Oct. 30 to Nov. 4 on \$50,000 bonds to erect courthouse. (Previously noted.)

Tex., Dallas.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., receives bids until Nov. 16 for outlook gallery in U. S. courthouse, post-office, etc. (See Government and State.)

W. Va., Charleston.—Kanawha county opened bids to erect courthouse addition; George F. Gates Co. is lowest bidder at \$49,400; David Dick, Archt., 24 Citizens' National Bank Bldg., Charleston. (Lately noted.)

DWELLINGS

Ala., Birmingham.—Meyer & Goldman will build apartment at Third Ave. and 21st St.; cost \$3000.

Ala., Birmingham.—Joe Ward, 2107 3d Ave., will erect residence at Norwood; cost \$3000. (Lately noted under Stores.)

Ala., Birmingham.—Mrs. W. E. Chambers will erect bungalow; 1½ stories; stone; tile roof and baths; hardwood floors; steam heat; cost \$8000; H. D. Breeding, Archt., 15 Watts Bldg., Birmingham.

Ala., Birmingham.—Mrs. A. W. Trigg will erect residence; 2 stories; frame; tile or cement roof; furnace heat; hardwood floors; tiled bathrooms; cost \$4000 Miller & Martin, Archts., Title Guarantee Bldg., Birmingham.

Ala., Birmingham.—P. C. Covington has plans by Salle & Mewhinney, Birmingham, for residence; 2 stories; brick veneer; furnace heat; composition roof; tiled baths and porch; hardwood floors; cost \$5000.

Ala., Birmingham.—L. A. Baker is having plans prepared by Salle & Mewhinney, Birmingham, for residence; 2 stories; brick veneer; composition roof; furnace heat; tile baths; tile porch; hardwood floors; cost \$5000.

Ala., Birmingham. — J. G. Johnson has plans by Ben Price, Birmingham, for residence; 2 stories; brick veneer; composition shingle or cement tile roof; tiled conservatory and bathroom; hardwood floors; furnace heat.

D. C., Washington. — Geo. T. Santmyer, 216 Kenos Bldg., prepared plans by more than 80 dwellings on Rhode Island Ave. between 10th and 12th Sts., and on other streets in same locality; California bungalow type; 1 story and attic.

D. C., Washington. — B. H. Gruber, Union Trust Bldg., will erect ten 2-story brick dwellings at 205-223 Rock Creek Church Rd.; box type; 20 ft. square; 2 stories; tapestry brick; limestone trimmings; 6 rooms, bath and sleeping porch; ultimate plans call for about 30 structures.

D. C., Washington. — B. J. Stickney let contract to E. N. Hamilton, 502 Park Rd. N. W., Washington, to erect 2-story frame residence at 1432 Madison St. N. W.; cost \$4000.

Fla., Eustis. — D. J. Caldwell will erect residence at Center and Orange Aves.

Fla., Titusville. — C. G. Rogero, 107 Ames Ave., South Jacksonville, Fla., will rebuild residence noted damaged by fire in September; 38x27 ft.; cypress weatherboarding; brick foundation; oak and pine floors; city lights; cost \$3000. (Lately noted.)

Ga., Atlanta. — E. G. Harris, Macon, Ga., has plans by P. E. Dennis, Macon, for residence; about 15 rooms; concrete brick; 2 stories; hollow tile, brick-veneer walls; floors of fireproofing and concrete; tile roof; electric lights; broken-stone driveway; vapor low-pressure steam heat to cost \$1200; E. A. Gleason, superintendent of construction, College Park, Ga. Address owner at College Park. (Lately noted.)

Ga., Savannah. — C. D. Wilkinson will erect residence.

Ga., Savannah. — E. G. Thomson will erect residence; 2 stories; frame.

Ga., Savannah. — Civic Realty Improvement Co. will erect 2-story frame dwelling on Ogeechee Rd.

Ga., Savannah. — Denmark Groover will erect residence.

Ky., Lexington. — Miss Carrie Brown will erect \$4000 residence on Ashland Ave.

Ky., Louisville. — Priest Frazier, Realty Bldg., will erect 4 frame cottages at 1725-33 Wilson Ave.; metal roof; wood floors; gas grates; cost \$4800.

Ky., Louisville. — Herman Blatz will erect brick dwelling at 2109 Edgeland St.; cost \$3500.

Ky., Louisville. — J. T. Featherston will erect brick dwelling at 2030 Eastern Park-way; cost \$4500.

Md., Baltimore. — Frank O. Singer, Jr., 600 Equitable Bldg., will erect 18 dwellings on Chauncey Ave. near Brookfield Ave.; ornamental brick; 2 stories; 16x55 ft.; cost \$32,600; W. B. Gerwig, Archt., 600 Equitable Bldg., Baltimore. (Lately noted.)

Md., Hollins Station. — F. J. Griffith is having plans prepared by E. L. Palmer, Jr., 408 Roland Ave., Roland Park, Md., for residence near Hollins Station.

Md., Baltimore. — John T. Grindall will erect 2-story brick dwelling at 19 W. Cross St.; 14x43.6 ft.; cost \$3000; Samuel Sprent, Archt., 203 N. Pine St., Baltimore.

Md., Baltimore. — Frank Novak, 744 N. Kenwood Ave., will erect 16 dwellings at Washington St. and Clifton Park; 2 stories; porch front; cost, including site, \$2000 to \$5000.

Md., Baltimore. — J. Charles Kemper, Plimlico Ave. near Ridgeley Ave., will erect 7 dwellings on Lafayette Ave. near Spring St.; 2 stories; size 14x44 ft.; one 20x31 ft.; cost about \$9000; also convert residence at Hartford and Lafayette Aves. into apartment houses.

Md., Baltimore. — Richard H. Pleasants has plans by Ellicott & Emmart, Union Trust Bldg., Baltimore, for residence; cost \$20,000; contractors estimating are Cowan Building Co., 106 W. Madison St.; G. Walter Tovell, Eutaw and McCulloch Sts.; W. E. Burnham, Law Bldg.; Gladfelter & Chambers, 729 Roland Ave.; all of Baltimore.

Md., Elkridge. — Addison F. Worthington, Elkridge, has not prepared plans for residence for S. S. Murray as lately reported.

Md., Stevenson. — S. Bonsal Brooks, care of Sanford & Brooks, Commerce and Water Sts., Baltimore, Md., is having plans prepared by Owings & Machen, 347 N. Charles St., Baltimore, for residence; 2½ stories; 85x35 ft.; weatherboarding, frame and brick foundation; shingle roof; Georgia pine floors; hot-water heat; electric lights; bids

opened Nov. 1; cost about \$10,000. Address architects.

Mo., Kansas City. — J. A. Finches will erect 2 two-story stucco dwellings at 4036-38 Brooklyn St.; cost \$3000.

Mo., Kansas City. — G. E. Henry will erect 3 stucco dwellings at 3801-05 Benton St.; cost \$7500.

Mo., Kansas City. — E. H. Lowry will erect 2-story brick dwelling at 2409 E. 27th St.; cost \$3500.

Mo., Kansas City. — Gus Agee will erect two 2-story stone dwellings at 116-20 N. Van Brunt St.; cost \$1000 each.

Mo., Kansas City. — H. W. Ruting will erect two 2-story stucco dwellings at 3709-11 Benton St.; cost \$5000.

Mo., St. Louis. — Burdeau Real Estate Co. will erect residence at Delmar Blvd. and Beverly Pl.

Mo., St. Louis. — George Schenk will erect residence at 4015 Magnolia Pl.; light matt brick and cement plaster exterior; tile roof; sleeping porch; Robt. G. Kirsch, Archt., 8t. Louis.

Mo., St. Louis. — J. H. Byrnes will erect 6-room bungalow on Hamilton Ave.

Mo., St. Louis. — Edw. L. Owens will erect 2 cottages; brick.

Mo., St. Louis. — Chas. T. Uhrl will erect residence on Jennings Station Rd.

Mo., St. Louis. — Sam Koplar and Sam Hamburg will erect 42 bungalows on Lafayette Ave. between Klemm and Tower Grove Aves.; brick and stucco; 6 and 7 rooms; screened-in sleeping porches; sun parlors; brick and stone porches; cost, including site, \$250,000.

Mo., St. Louis. — Clarence J. Curby, Secy. of Smith & Davis Mfg. Co., will erect residence at 6 Washington terrace; 14 rooms and sunroom; brick; stone trimmings.

Mo., St. Louis. — R. W. Cole, Moline, Ill., will erect 8 bungalows on Stratford Ave.; brick and stucco; 5 rooms each; cost about \$25,600.

N. C., Asheville. — Ophelia L. Meriwether will erect 8-room residence on Forest Hill Rd.; cost \$4500.

N. C., Asheville. — E. F. Chambers will erect 7-room residence on Edwin Pl., Grove Park; cost \$5000.

N. C., Greenville. — S. T. White will erect 2 residences; 2 stories; brick; bungalow style.

N. C., Wilmington. — W. G. James will erect 9-room dwelling on Market St. between 18th and 19th Sts.; cost about \$3500.

N. C., Winston-Salem. — B. M. Cahill, P. O. Box 556, has plans by Geo. Hendrix for dwelling; 2 stories; 7 rooms; wood; cedar shingle roof; rift-pine floors; city electric lights; cost \$3000 construction begun; day labor; all materials purchased. (Lately noted.)

Okl., Hugo. — Dr. C. A. Thompson will erect 8-room residence.

Okl., Muskogee. — Wm. Gulager will erect 6000 residence.

Okl., Muskogee. — Chas. F. Smith will erect 2-story residence; tile roof; cost \$10,000.

Okl., Muskogee. — C. C. Hulquist will erect \$60,000 residence.

Okl., Muskogee. — S. B. Locke will erect \$5000 residence.

Okl., Oklahoma City. — Nichols & Chandler will erect two 1-story and one 2-story frame residences; cost \$7500.

Tenn., Memphis. — S. Malkin has plans by Mahon & Broadwell, Memphis, for residence on N. Parkway near Stonewall Pl.; cost about \$5000.

Tex., Beaumont. — John L. Alford will erect two-story frame residence; cost \$3000.

Tex., El Paso. — Newman & Hadfield are erecting 3 four-room bungalows to cost \$250 to \$300 each.

Tex., El Paso. — Perry-Kirkpatrick Co. will erect several bungalows.

Tex., Fort Worth. — Felix Z. Gaither will erect residence; frame; cost \$3000.

Tex., Fort Worth. — Roy Jackson, 1214 Fairmount Ave., has plans by Walter E. Taylor, 712 First National Bank Bldg., Fort Worth, for residence; 2 stories; 9 rooms; frame; 46x56 ft.; day labor; hot-air heat; cost \$3500.

Tex., Paris. — Dr. W. B. Johnson, Selma, N. C., is having plans prepared by C. G. Gurtis, 18½ Lamar Ave., Paris, for residence and bungalow.

Tex., San Antonio. — F. H. Yeagley will erect 5 dwellings on Groveland Ave. and Buena Vista St.; cost \$7350.

Tex., Sherman. — A. J. Ladd has plans by

Wm. Albert Tackett, Sherman, for residence; 7 rooms; 32x60 ft.; tile and stucco; composition roof; wood floors; gas and electric fixtures; cost about \$3000.

Tex., Sherman. — S. W. Gladney has plans by Wm. Albert Tackett, Sherman, for residence; 2 stories; 9 rooms; 38x42 ft.; hollow tile and white stucco; composition roof; maple and pine flooring; mosaic tiling; skylight; gas and electric fixtures; hot-water heating plant; boiler covered with asbestos cement; architect may be addressed; cost about \$8000.

Tex., Wichita Falls. — W. D. Shell has plans by Field & Clarkson, Wichita Falls, for auditorium at 18th St. and Columbia Rd. N. W.; 138x157 ft.; 3 stories; tapestry brick and limestone; interior finished in marble; main hall with rolling roof of glass; ceiling 35 ft. high; seating capacity 1800; store on corner.

Va., Lynnwood. — John C. Wheat will erect dwelling to replace structure lately noted damaged by fire; about 40x50 ft.; frame or stucco; tin roof; hardwood floors; hot-air heat; electric or acetylene lighting; construction begins in spring.

Va., Petersburg. — Israel Silberstein, 612 Equitable Bldg., Baltimore, Md., plans to expend \$100,000 to erect dwellings; 2 stories; brick; slate roof; probably steam heat; initial operation, 6 dwellings; Stanislaus Russell, Archt., 2900 Clifton Ave., Baltimore, Md.

Va., Petersburg. — Petersburg Building Co. organized with \$50,000 capital stock; Wm. B. McIlwaine, Prest.; Wm. E. Poole, 1st V.P.; D. Perkins, 2d V.P.; E. H. Patterson, Secy.-Treas.; will erect dwellings.

Va., Richmond. — Dr. H. S. McLennan will erect dwelling on Monument Ave.; cost \$19,500; H. Duncan Lee, Archt., Richmond.

Va., Roanoke. — Mrs. Mary A. Garry will erect 2-story brick dwelling on 6th St.; cost \$3500.

GOVERNMENT AND STATE

Fla., Pensacola. — Hangars. — Bureau of Yards and Docks, Navy Dept., Washington, D. C., opened bids to erect 3 hangars at U. S. Navy Aeronautic Station; steel frames; C. H. Turner Co., Pensacola, is lowest bidder at \$36,474. (Lately noted.)

Mo., Moberly. — Postoffice. — Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., opened bids to remodel and erect extension to postoffice; Algernon Blair, Montgomery, Ala., is lowest bidder at \$32,790. (Previously noted.)

Tex., Dallas. — Postoffice. — Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., receives bids until Nov. 16 for new outlook gallery in United States courthouse, postoffice, etc.; plans and specifications at office of custodian, Dallas, and Mr. Wetmore as above.

Va., Norfolk. — School. — Bureau of Yards and Docks, Navy Dept., Washington, D. C., opened bids to erect apprentice seamen school at St. Helena Navy-Yard; 2 stories; brick; R. R. Richardson & Co., Norfolk, are lowest bidders at \$36,978. (Lately noted.)

Va., Norfolk. — Bungalows. — Bureau of Yards and Docks, Navy Dept., Washington, D. C., is erecting 12 bungalows at St. Helena Training Station.

HOSPITALS, SANITARIUMS, ETC.

Ala., Dothan. — Houston County Medical Society is promoting erecting \$30,000 hospital.

HOTELS

Ky., Louisville. — Crescent Hotel Co. will erect \$15,000 addition to Crescent Hotel at 408 W. Walnut St., increasing to 44 rooms; 3 stories.

Mo., Kansas City. — Hoffman Bros. Investment Co., 524 Ridge Bldg., will erect hotel at 9th and Charlotte Sts.; 1 stories; brick; estimated cost \$45,000; W. Hilton Smith, Archt., 518 Massachusetts Bldg., Kansas City.

Okl., Ardmore. — W. F. Whittington will rebuild hotel lately noted wrecked by explosion; estimated cost \$150,000.

Va., Hopewell. — Stewart Realty Co. will erect proposed hotel on Broadway; 3 stories; frontage 150 ft.; 130 rooms; portion of ground floor occupied by Hopewell Laundry; W. H. Putts, Galax, Va., in charge of portion of construction; completion in 6 weeks.

Va., Hopewell. — Israel Silberstein, 612 Equitable Bldg., Baltimore, plans to erect store and hotel buildings, etc. (See Stores.)

Va., Petersburg. — Stratford Hotel Corporation incptd. with \$50,000 to \$200,000 capital stock; Felis Keegan, Prest., Richmond, Va.; Frank Haier, Secy.-Treas., Petersburg; acquired Stratford Hotel and will remodel interior.

W. Va., Welch. — I. J. Rhodes, J. Frank Johnson and Sam Polon will erect building

on Wyoming St.; 3 stories and basement; 30x90 ft.; concrete and brick; asbestos roof; concrete, wood and tile floors; hot-water heat; electric lights; prism vault lights; basement for garage, first floor for automobile display-room and upper floor for addition to Ellwood Hotel; cost \$15,000; owners will buy materials; A. F. Wyson, Archt., Princeton, W. Va. (Address Mr. Polon.)

MISCELLANEOUS

D. C., Washington. — Auditorium. — George T. Smallwood has plans by Reginald Wyckoff, Genre, 327 Woodward Bldg., Washington, for auditorium at 18th St. and Columbia Rd. N. W.; 138x157 ft.; 3 stories; tapestry brick and limestone; interior finished in marble; main hall with rolling roof of glass; ceiling 35 ft. high; seating capacity 1800; store on corner.

Mo., St. Louis. — Clubhouse. — Y. M. H. A. acquired building at 3645 Delmar Blvd., and will remodel for clubhouse, providing dance hall, swimming pool, etc.; Moses Fraley, Chrmn. of Com.

Mo., St. Louis. — Service. — Scullin Steel Co. will erect service building at 6720 Manchester Ave.; 2 stories; 50x80 ft.; will contain offices for superintendent and timekeepers, quarters for employees to check in and out for work, locker-rooms, showers, etc.; cost \$15,000.

Mo., St. Louis. — Clubhouse. — Wednesday Club will erect addition to clubhouse; completion in 40 days.

S. C., Spartanburg. — Stable. — W. D. Pearson plans to erect stable; 1 story; 30x60 ft.; brick; metal roof.

Va., Luray. — Barn and Sheds. — J. G. Grove has plans by W. L. Cave for barn, 45x30 ft., and sheds, 40x40 and 35x35 ft., to replace burned structures; frame; metal roof; galvanized iron roof; principally dirt floors; construction by owner.

Va., Richmond. — Hall. — Mrs. Belle D. Rady will erect store and hall. (See Stores.)

RAILWAY STATIONS, SHEDS, ETC.

N. C., Belmont. — Piedmont & Northern Ry. A. C. Lee, Engr. M. W., Greenville, S. C., will erect passenger and freight station; completion in about 60 days.

SCHOOLS

Ala., Anniston. — City votes Nov. 22 on \$5,000 school and refunding bonds; J. L. White, Mayor. (Lately noted.)

Ala., University. — University of Alabama will erect athletic grandstand; heart lumber; cost \$3000; Miller & Martin, Archts., 910-11-12 Title Guarantee Bldg., Birmingham, Ala.

Ark., Clarksville. — Arkansas Cumberland College will erect dormitory for young men; 3 stories and basement; pressed brick; accommodations for 80 students; W. H. Wilson, Lamar, Ark.; Rev. W. T. Thurman, Brinkley, Ark.; Rev. F. M. Wylie, Hot Springs, Ark., and others, Building Com.

Fla., Jacksonville. — Board of Education is having plans prepared by H. J. Klutho, Jacksonville, for schools at Panama Park and Riverside; approximately 177x50 ft. each; concrete with brick walls; probably tar and gravel roofs; concrete floors; cost \$60,000 and \$50,000, respectively. (Lately noted.)

Fla., Okachobee. — School Dist. No. 6, St. Lucie county, is having plans prepared by A. E. Lewis, 24-26 Real Estate Bldg., Miami, Fla., for graded and high school; 103x118 ft.; reinforced concrete; fireproof; composition, asbestos over concrete slab roof; cement floors, covered with wood in classrooms; steam heat; electric lights; cost \$18,000; probably vote on \$20,000 bonds; desires correspondence with architects. (Third Ward School lately noted damaged by fire.)

Tex., Dallas. — Trustees of M. L. V. school to Nov. 10.

Tex., Lubbock. — Trustees of Lubbock and Industrial, Inc., voted \$100,000 bonds; \$100,000; plant cholera victims about \$10,000.

Va., New Kent. — Petition filed to build school and extend school to Nov. 10.

Tex., Lufkin. — Trustees of Lufkin and Industries voted \$100,000 bonds to Nov. 10.

Tex., Plainview. — Trustees of Plainview and Industries voted \$100,000 bonds to Nov. 10.

W. Va., Woodrell. — Elvins bldg., office of W. Bates, Wheeling, W. Va.

W. Va., Dutton. — Is re-building bldg.

October 28, 1915.]

MANUFACTURERS RECORD.

57

basement;
; asbestos
looms; hat-
erium vault
floor for
er floor for
15,000; own-
ing, Archt.,
Polon.)

N. C., Greensboro.—Greensboro College for
Women plans to erect dormitory; cost about
\$30,000; accommodations for about 70 stu-
dents; E. P. Wharton, J. E. Latham and
others, Com.

N. C., Middleburg.—Middleburg Special
Tax School Dist. voted school-building
bonds. Address Dist. School Trustees.

Okl., Oklahoma City.—County Clerk re-
ceives bids until Nov. 8 to erect building in
Dist. No. 84; plans and specifications at
office of M. Cornelius, County Clerk.

Okl., Tulsa.—Catholic Church plans to
erect school at 8th and Boulder Sts. Ad-
dress The Pastor.

Tenn., Bristol.—City votes Nov. 23 on \$60,-
00 bonds to erect school; W. H. Lynn,
Commr. Accounts and Finance. (Lately
noted.)

Tenn., Sweetwater.—Town voted \$15,000
bonds to erect addition to school, etc.; J.
M. Jones, Recorder. (Previously noted.)

Tenn., Winchester.—City Commsrs. receive
bids until Nov. 9 to reconstruct non-
school building for high school; plans and
specifications at office of Edgar L. Love,
Archt., Huntsville, and City Commsrs.; E. W.
Chatton, Mayor.

Tex., Alice.—J. G. Toland, School Supt., is
interested in proposition to issue bonds to
erect school building.

Tex., El Paso.—City opened bids to com-
plete high school; reinforced concrete, faced
with pressed brick and terra-cotta; audit-
torium and balcony to seat 1500; fireproof con-
struction throughout; hot-blast and steam
heating system; concrete and Barrett specifi-
cation roof; complete ventilating system
throughout entire building with air washers;
outdoor stadium 30x390 ft., with oval run-
ning track one-quarter mile long; reinforced
concrete seats; 17 tiers rising to height of
30 ft.; American Construction Co., Houston,
Tex., is lowest bidder at \$272,900; concrete
structural portion, for which J. E. Morgan,
El Paso, had contract, is completed; cost
\$50,000; Trost & Trost, Archts., Mills Bldg.,
El Paso. (Lately noted.)

Tex., Houston.—County Commsrs. will con-
sider election on \$150,000 bonds to improve
and extend school buildings in Dist. 20.

Tex., Houston.—Harris county, H. L.
Washburn, Auditor, receives bids until Nov. 1
to repair Boys' School at South Houston;
plans and specifications at office of A. C.
Finch, Archt., 206 Pearce Theater Bldg.,
Houston.

Tex., Houston.—School Board contemplates
erecting schools as follows in connection with
\$200,000 bonds to be sold: Taylor School,
Louisiana and Leland Sts., plans practically
completed; Montrose School, patio type,
plans in progress; Eastwood School, cottage
plan; 4-room annex to Travis School; annex
with swimming pool for Northside Junior
School; school at Lyons and Gregg Sts.; in-
dustrial annex to Reagan School; Holly-
wood School; school near Emancipation
Park. (Lately noted.)

Tex., Houston.—Harris county, H. L.
Washburn, Auditor, will erect sleeping
porch, kitchen addition, box in engine-room,
plate storm doors, etc., at Harris County
School for Girls; bids opened Oct. 18.

Tex., Jefferson.—School Board has plans
by M. L. Waller & Co., Fort Worth, Tex., for
school to cost about \$24,000; bids opened
Nov. 10. (Lately noted.)

Tex., Lakeview.—Lakeview School Dist.
Trustees are considering election on \$10,000
bonds to erect brick school. (Lately noted.)

Tex., Prairie View.—Prairie View Normal
and Industrial College approved plans for
building, to include hospital, cost about \$50,-
000; animal husbandry building, about \$40,-
000; plant to manufacture and distribute hog
cholera vaccine, about \$15,000; dairy barn,
about \$10,000.

Va., Newport News.—School Trustees will
petition city for \$100,000 bond issue to erect
building to replace George Washington
School and to enlarge Booker T. Washing-
ton School.

W. Va., Clay.—Board of Education of Clay
Dist. opens bids Oct. 30 to erect school at
Round Bottom.

W. Va., Pennsboro.—Clay Dist., J. A.
Woodell, Secy. Board of Education, re-
ceives bids until Nov. 11 to erect 2-story
brick school; plans and specifications at
office of Mr. Woodell, Pennsboro, and C.
W. Bates, Archt., National Bank Bldg.,
Wheeling, W. Va.

W. Va., Wheeling.—Triadelphia School
Dist. is reported to vote on \$50,000 school-
building bonds. Address Dist. School Trus.

STORES

Ala., Albertville.—Singleton & Co. will erect
business building; 2 stories; brick; 75x120
ft.; construction begun.

Ala., Albertville.—Gibbreath & Barnett will
erect 3-story brick business building; 50x120
ft.; construction begun.

Ala., Birmingham.—Mrs. W. L. Morris will
erect building; 2 stories; 50x100 ft.; brick;
plate glass; tar and gravel roof; stores on
lower floor; apartments above; cost \$8000;
H. D. Breeding, Archt., Birmingham.

Ala., Huntsville.—Wm. T. Hitchens will
erect store and office building.

Ala., Robertsdale.—E. A. Anderson will
erect business building.

Ala., Robertsdale.—Dr. R. A. Hall will
erect store and office building; cement-block
construction.

D. C., Washington.—Geo. T. Smallwood has
plans for store and auditorium building.
(See Miscellaneous Structures.)

D. C., Washington.—F. G. Carroll has plans
by J. J. Moeba, 217 Colorado Bldg., Wash-
ington, for store building at 714 12th St. N. W.;
3 stories; brick; cost \$10,000.

Fla., Jacksonville.—J. J. Purcell will erect
2-story brick building at Talleyrand Ave.
and Swift St.; cost \$5000.

Fla., Orlando.—Kummer & Holdorf will
erect building; 50x100 ft.; probably concrete
block construction.

Ga., Athens.—McDowell estate is reported
as probably to erect mercantile building to
replace Lyric Theater, noted damaged by
fire.

Ga., Atlanta.—F. J. Cooledge & Sons, Inc.,
will erect store buildings at 328-334 Marietta
St.; 75x80 ft.; brick; 2 stories and base-
ment; fireproof roof; cost \$12,000 to \$15,000;
details not determined; day work. (Lately
noted.)

Ky., Pikeville.—S. M. Cecil will erect busi-
ness block; 40x60 ft.; contract let Oct. 30.

Md., Cumberland.—Conrad A. Miller plans
to erect addition to building at 95-97 Colum-
bia St.; 2 stories; 12x20 ft.; wood; tin roof.

Mo., Kansas City.—Knights of Pythias will
erect store, office and lodge building. (See
Association and Fraternal.)

Mo., St. Louis.—Louis Cella and James A.
Curotte will erect store and apartment
building at Lacledle and Euclid Aves.; 3 sto-
ries; 90x100 ft.; 4 stories on ground floor; 8
apartments of 5 and 6 rooms above; cost
\$60,000.

Mo., St. Louis.—B. H. Yoeman will erect
building on Hodiamont Ave.; 2 stories;
lower floor for 2 stores; upper floor for
apartments.

N. C., Asheville.—Mark W. Brown will
erect addition to building for stores and
offices. (See Bank and Office.)

N. C., Rocky Mount.—George S. Edwards
will erect store building.

Okl., Drumright.—Hognis & Culp, Mem-
phis, Tenn., will erect 3-story business build-
ing.

Okl., Enid.—J. B. Ferguson contemplates
erecting 3-story brick business building.

Okl., Hennessy.—Dr. E. D. Bradley will
erect brick business building; completion by
Dec. 1.

Ola., Miami.—J. G. Austin, Grove, Okla.,
will erect 2-story brick business building.

S. C., Easley.—J. A. Robinson has plans by
J. O. Sherk & Son to rebuild store building
noted damaged by fire; 25x90 ft.; tar and
gravel roof; cement floors; cost \$3000; elec-
tric lights, \$150; opens bids about Nov. 1.

Tex., Childress.—Childress Index is having
plans prepared for business and office build-
ing; brick.

Tex., Galveston.—Thos. B. Scott will erect
building to replace structure damaged by
storm; 1 story; brick.

Tex., Handley.—Matt Skeen will erect busi-
ness building; 1 story; 60x80 ft.; face brick;
plate and prism glass; tin roof; iron beams.

Tex., Quitman.—Farmers and Merchants'
State Bank will erect bank and mercantile
building. (See Bank and Office.)

Va., Graham.—Geo. A. Reynolds will erect
business building; 2 stories; brick; placed
order for some materials, including iron
beams; I. T. Frye will be in charge of man-
sion.

Va., Hopewell.—Israel Silberstein, 612 Equitable
Bldg., Baltimore, plans to erect num-
ber of buildings for stores and hotel, stores
and apartments, etc.; initial operation 6
structures; ultimate expenditure \$100,000;
Stanislaus Russell, Archt., 2900 Clifton Ave.,
Baltimore.

Va., Norfolk.—Brambleton Lodge No. 56,

Knights of Pythias, will erect building to
contain stores on first floor. (See Associa-
tion and Fraternal.)

W. Va., Welch.—George Bailey has plans
for 2-story brick store building; A. F. Wy-
son, Archt., Princeton, W. Va. (See Ma-
chinery Wanted—Building Materials.)

Va., Richmond.—Mrs. Belle Rady will
erect detached 2-story brick store and hall
building on Roberts St.; cost \$6000.

THEATERS

Ala., Gadsden.—Frank Moragne, Mgr. of
Royal Theater, will improve theater; erect
25-ft. extension in rear, increase seating ca-
pacity, install new lighting fixtures, redecor-
ate, etc.

Mo., Kansas City.—F. Elmer Scott will erect
Linwood Theater at 3034-36 Prospect Ave.;
brick; stucco front; 60x128 ft.; ceiling 20 ft.
high; seating capacity 1200.

Mo., Springfield.—J. L. Carlisle, Kansas
City, Mo., representing Grubbs Bros.' Syndicate,
will erect theater; cost about \$65,000.

Mo., St. Louis.—Chas. A. Kalbell has plans
by Kennerly & Stiegneyer, St. Louis, for
moving-picture theater at 2498 E. Union
Ave.; 50x10 ft.; brick; composition roof;
wood floors; cost \$10,000; heating plant,
\$1000; construction by owner.

W. Va., Kenova.—B. Harris, Kenova, and
Wm. Cooksey, Grayson, Ky., are having
plans prepared by King & Willett, Ashland,
Ky., for moving-picture theater; cost \$7000.

W. Va., Huntington.—Huntington Tobacco
Warehouse Co., H. E. Spilman, Prest., is re-
ported to erect tobacco warehouse to be
leased to Liggett & Myers.

WAREHOUSES

Ky., Maysville.—C. M. Jones, R. B. Holton
and others will erect loose-leaf tobacco
warehouse; 246x122 ft.

Ky., Pleasureville.—Burley Tobacco Co.
will erect addition to warehouse; 30x26 ft.

Ky., Shelbyville.—Burley Tobacco Co. will
erect addition to warehouse, increasing from
100x119 to 290x190 ft.

Md., Baltimore.—H. Klaff & Co. have plans
by J. C. Spedden, 1640 Hanover St., Balti-
more, for warehouse at Central Ave. and
Gough St.; 40x51 ft.; 3 stories; concrete
foundation; brick walls; slab roof; wood
and iron floors; no heating; electric ele-
vator; electric lighting; cost \$5500; receiving
bills; separate bills for elevator and lighting.
(Lately noted.)

N. C., Wilmington.—Hilton Compress &
Warehouse Co., W. B. Cooper, Prest., Incpd.,
\$100,000; will erect compress and warehouse.
(See Cotton Compresses and Gins.)

Tex., Nacogdoches.—W. T. Wilson will
erect sheet-iron warehouse to replace lately-
burned structure; construction begun.

Va., Richmond.—Vaughan estate will re-
build warehouse noted collapsed.

Va., Richmond.—Tredegar Co. will erect
1-story brick warehouses on Tredegar
St.; cost \$5000.

W. Va., Huntington.—Huntington Tobacco
Warehouse Co., H. E. Spilman, Prest., is re-
ported to erect tobacco warehouse to be
leased to Liggett & Myers.

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

Ark., Texarkana.—Conway Bros. let con-
tract to Walter Harris, Texarkana, to erect
three 10-room 2-story brick apartments at
5th and Laurel Sts.

Fla., Leesburg.—M. H. Goethe let contract
to erect store and apartment building. (See
Stores.)

Fla., Palm Beach.—J. C. Cobb, West Palm
Beach, Fla., let contract to erect store and
apartment-house. (See Stores.)

Mo., St. Louis.—George Meek let contract
to G. W. Cole, St. Louis, to erect 2-story ten-
ement-house at 4341 Bates St.; cost \$3000.

N. C., Wilmington.—Miss Valeria Williams
and R. V. Williams let contract to J. G.
Osterman, Wilmington, to erect apart-
ment-house at 212 Red Cross St.; 23 rooms;
colonial style; cost \$6000; J. F. Leitner, Archt.,
Wilmington.

Tex., Austin.—J. B. Robertson has plans
by Leslie N. Iredell, Austin, for apart-
ment-house; 6 apartments; let contract to Frank
Baron for brick work and to Frank Hughes
for carpenter work; cost \$18,000.

Tex., Galveston.—J. St. Mary let contract
to erect 3 apartment-houses at 7th St. and
Seawall Blvd.; foundation on 20-ft. piling
overlaid with concrete base; pressed-brick
superstructures; cost about \$25,000. (Previ-
ously noted.)

ASSOCIATION AND FRATERNAL

Fla., Sanford.—R. P. O. E. let contract to
Geo. W. Venable to erect Elks' Home; brick;
tile roof; tile floors; electric lighting; cost
\$16,000. (Noted in June.)

Ga., Camilla.—Dr. E. A. Newsom let con-
tract to erect store, office and lodge build-
ing. (See Stores.)

W. Va., Logan.—Y. M. C. A. let contract to
erect \$10,000 building.

BANK AND OFFICE

Fla., St. Petersburg.—Dr. Wm. M. Davis
let contract to erect residence and office
building. (See Dwellings.)

Ga., Camilla.—Dr. E. A. Newsom let con-
tract to erect store, office and lodge build-
ing. (See Stores.)

Mo., St. Louis.—Bank of Commerce let con-
tract to H. Brandenburg, St. Louis, to alter
bank building at 200 N. Broadway; cost
\$10,000.

Tenn., Murfreesboro.—First National Bank
let contract to Williams & Bell, Murfrees-
boro, to remodel building and install fixtures;
Bedford stone front; marble fixtures;
marble-tile and oak floors; city electric
lights; new wall fixtures; cost \$7500. Address
contractors. (See Machinery Wanted—Build-
ing—Chairs; Electric Fixtures.)

Tex., El Paso.—Landers Lumber Co. let
contract to J. C. McElroy, El Paso, to erect
lately-noted office and warehouse building in
1800 block Texas St.; 2 stories and base-
ment; sheds; brick; built-up felt and as-
phalt roofing; wood floors; no heating or

CHURCHES

D. C., Washington.—Episcopal Cathedral
let contract to Geo. A. Fuller Co., Munsey
Bldg., Washington, to erect apse; also let
contracts to Barber & Ross, 614-22 11th St.,
Washington, for structural steel; Shea-Donnelly-
Giberson Co., Bedford, Ind., for cut
stone, and Daly & Hopper, 1902 11th St. N.
W., Washington; cost \$250,000; Henry
Vaughan, Archt., 20 Pemberton Sq., Boston,
Mass.; Arthur B. Heaton, Associate Archt.,
Wilkins Bldg., Washington. (Previously
noted.)

Fla., Lakeland.—First Baptist Church, Rev.
Wallace Wear, pastor, has plans by and let
contract to E. C. Angell, Lakeland, to erect
lately-noted building on N. Florida Ave.;
40x77 ft.; Georgia brick; composition roof;
wood and cement floors; gas heating; elec-
tric lights; cost \$3500. Address Mr. Angell.
(See Machinery Wanted—Building Materi-
als.)

Md., Govans.—Govans M. E. Church, Rev.
Chas. L. Pate, pastor, let contract to Cowan
Building Co., Baltimore, to erect addition to
building; Sunday-school building, 40x75 ft.;
parsonage, 30x32 ft.; Falls Rd. granite;
white marble trimmings; slate roof; pine
flooring; cost \$22,000; heating plant, \$1000;
electric lights, \$400. Address contractor.

Miss., Tylertown.—Baptist church, Rev.
Jas. Q. Quin, pastor, let contract to G. A.
Linton, Tylertown, to erect building; 57x70
ft.; 2 stories; brick; asbestos roof; bowl
floor of double strength; cost \$7500; hot-air
heating plant about \$300; electric lights;
J. E. Green, Archt., Birmingham, Ala.
(Previously noted.)

Tex., Austin.—Tabernacle Baptist Church
has plans by Leslie N. Iredell, Austin, and
let contract to W. B. Irvings and W. E.
Hardemon, Austin, to erect frame building;
cost \$3000. (Noted in June.)

Tex., Chillicothe.—Methodist church let con-
tract to Pete Garrett, Roaring Springs, Tex.,
to erect building; 2 stories; brick veneer;
R. H. Stuckey, Archt., Chillicothe.

Tex., Roanoke.—Presbyterian Church let
contract to erect building at Oak and Den-
ton Sts.; approximate cost, \$4000.

Va., Hopewell.—St. Joseph's Catholic
Church, Petersburg, Va., Rev. Father Haier,
Pastor, let contract to Harrison Construction
Co., Petersburg, to erect building; 2 stories
and basement; auditorium 100x43 ft.; cost
\$25,000.

W. Va., Wheeling.—Spiritualist church let
contract to J. R. Butts & Sons Co., Wheel-
ing, to erect building; 2 stories; brick; cost
\$20,000; Joseph Leiner, Archt., Wheeling.

CITY AND COUNTY

Miss., Greenville—Firehouses.—City let
contract to Alexander Lumber Co., Green-
ville, to erect 2 firehouses.

Mo., Butler—Home.—County Commrs. let contract at \$5647 to A. F. Wyard, Rich Hill, Mo., to erect county home; 34x60 ft.; 2 stories with concrete basement; red brick; redwood shingle roof; pine floors; electric wiring; concrete sidewalks; Frank Holland, County Clerk, Box 446, Butler. (Lately noted.)

COURTHOUSES

Okla., Tulsa.—Treasury Dept. let contract to erect postoffice and courthouse. (See Government and State.)

DWELLINGS

Ala., Birmingham.—Will Dunn is reported to have let contract to W. S. Cooper, Birmingham, to erect residence; 2 stories; frame and rubble-stone; composition shingle roof; furnace heat; hardwood floors; tile porch and baths; cost \$5000; Wm. T. Warren, Archt., Empire Bldg., Birmingham. (Lately noted.)

Ala., Birmingham.—Dr. W. W. Ransom let contract to Joe Ward, 2107 3d Ave., Birmingham, to erect residence; 2 stories; brick veneer; composition roof; wood floors; cost \$5000; hot-air heat \$175; Salle & Mewhinney, Archts., Woodward Bldg., Birmingham. (Lately noted.)

Ala., Birmingham.—Benj. Lender, Steiner Bldg., let contract to Joe Ward, 2107 3d Ave., Birmingham, to erect residence in Milner Crescent; stone and brick veneer; composition roof; wood floors; cost \$6000; H. B. Wheelock, Archt., Birmingham. (Lately noted under Stores.)

Ala., Carbon Hill.—A. B. Malone let contract to Joe Ward, 2107 3d Ave., Birmingham, Ala., to erect \$3500 residence.

Ala., Ensley.—D. F. Sugg let contract to Sly & Mosley Building Co., 411 19th St., Ensley, to erect residence; 32x34 ft.; hollow tile; composition shingle roof; oak and pine floors; electric lights; cost \$4000; hot-air heating plant \$200; Sly & Mosley, Archts., Ensley. (Lately noted under Ala., Birmingham.)

Ala., Fayette.—J. C. Grimsley let contract to Charley and Walter Hall, Birmingham, to erect residence near College Park; natural gas, electric lights and water connections; cost \$10,000.

Ark., Little Rock.—J. E. Skillern let contract to Wm. Peterson, Little Rock, to erect residence at 2524 Arch St.; brick veneer; tile roof; hardwood floors; hot-water heat; C. L. Thompson, Archt., Little Rock. (Lately noted.)

D. C., Washington.—J. C. Sullivan let contract to A. Taylor, 82 Seaton Pl., N. W., Washington, to erect 3-story brick dwelling at 237 Massachusetts Ave. N. E.; cost \$4900; W. S. Plager, Archt., Washington.

D. C., Washington.—E. J. Ellis let contract to R. P. Whitty Co., Union Trust Bldg., Washington, to erect 2-story tile dwelling at 5518 37th St. S. W.; cost \$7000; Murphy & Olmstead, Archts., Washington.

D. C., Washington.—P. J. Bresnahan let contract to W. C. & A. N. Miller, 11 H. St. N. W., Washington, to erect seven 2-story brick dwellings at 219-31 Parker St. N. E.; cost \$7600; Julius Wenig, Archt., 721 10th St. N. W., Washington.

D. C., Washington.—Gist Blair let contract to R. P. Whitty Co., Union Trust Bldg., Washington, to remodel 4-story brick dwelling at 1651 Pennsylvania Ave. N. W.; cost \$4000; Milburn, Heister & Co., Archts., Union Savings Bank Bldg., Washington.

D. C., Washington.—J. F. Huetter let contract to Williams & Murray, 3113 11th St. N. W., Washington, to erect 2-story frame dwelling at 3817 Morrison St. N. W.; cost \$4500; N. R. Grimm, Archt., Washington.

D. C., Washington.—P. W. Calfee, 1616 Longfellow St. N. W., let contract to D. F. Swab to erect 2-story tile dwelling at 1409 Kennedy St.; cost \$200; W. C. Dandt, architect.

D. C., Washington.—C. W. H. Moulton let contract to Thos. H. Banes Co., 737 13th St. N. W., Washington, to erect 2-story brick dwelling at 5702 16th St. N. W.; cost \$7000; P. I. Balch, Archt.

D. C., Washington.—E. J. DeLacy, 638 G St. N. W., has plans by J. B. Davis Palmer, Warder Bldg., Washington, for four 2-story brick dwellings at 71-73-77-79 New York Ave.; cost \$14,000; construction by owner.

Fla., Eustis.—Henry Ringling, Baraboo, Wis., let contract to J. D. Goodfellow, Eustis, to erect 2-story residence.

Fla., Eustis.—Nathan Berk, Akron, O., will erect bungalow on Center St.; contract let.

Fla., Leesburg.—Mrs. L. E. Dozier let contract through W. H. Carr, Archt., Leesburg, to erect bungalow.

Fla., Miami.—Clarence N. Busch, Great Neck, Long Island, N. Y., will erect \$20,000 winter residence; contract let.

Fla., St. Petersburg.—Dr. Wm. M. Davis let contract to Mutual Co., St. Petersburg, to erect residence and office building at 340 First Ave. N.; 3 stories; brick; 34x48 ft.; wood and tile floors; cost \$10,000; conduit electric-light system, \$200; Edgar Ferdon, Archt., St. Petersburg. (Lately noted.)

Ga., Quitman.—H. W. Stubbs let contract to W. W. DeHaven, Macon, Ga., to erect residence; 2 stories; 46x60 ft.; hollow tile outside walls; red tile roof; wood floors; probably hot-water heat; cost \$9332; lighting \$700; Hentz & Reid, Archts., Atlanta. (Lately noted.)

Ga., Macon.—Joe Travers let contract to H. A. Bankston, Macon, to erect 2 frame residences; metal roofs; cost \$4500; Curran R. Ellis, Archt., Ellis Bldg., Macon.

La., New Orleans.—John M. Dohmer let contract to Octave Bechtel to erect 2-story \$3000 residence.

Md., Baltimore.—Jos. L. White Realty Co., Potomac and Monument Sts., will erect ten 2-story brick dwellings in 3000 block McDowell St.; iron-spot brick; 13.11x44 ft.; slag roofs; pine floors; hot-air heat; electric lights; cement sidewalks; Chas. Brorina, Archt. and Contr., 9 N. Potomac St., Baltimore. Address owner.

Mo., Kansas City.—R. C. Banks of Banks Inspection Service is reported to have let contract to J. C. Nichols, Kansas City, to erect residence at Huntington and Central Sts.; cost \$7500.

Mo., St. Louis.—Albert G. Rupp let contract to J. P. Rupp B. & C. Co., 1901 E. Warne Ave., St. Louis, to erect residence at Adelaide and Conde Sts.; 38x32 ft.; brick and stucco; slate roof; wood floors; hot-air heat; electric lights; cost \$3500. Address Contractor.

Okl., Henryetta.—Misses Embree let contract to Paul Meeting, Henryetta, to erect 2-story 8-room residence.

Okl., Henryetta.—J. M. Wise let contract to Paul Meeting, Henryetta, to remodel stone residence.

S. C., Spartanburg.—W. M. Howard let contract to J. G. Littlejohn, Spartanburg, to erect 2 residences; 2 stories; 8 rooms; cost \$4000.

S. C., Spartanburg.—W. T. Finch let contract to Bryson & Webber, Spartanburg, to erect residence on Advent St.; 9 rooms; brick veneer; tile roof; cost \$7000; S. P. Tinsley, Archt., Spartanburg. Address contractors.

Tenn., Memphis.—Ernest C. Cook let contract to W. L. Berryberry, Memphis, to erect residence; 2 stories; 9 rooms; brick and brick; 1 story and basement kitchen extension; main building to have 2 wings; wood piles. (Lately noted.)

Tenn., Memphis.—Johnson & Haley let contract to S. Maikin, Memphis, to erect 6 dwellings; stucco and brick; cost \$3000 each; Mahon & Broadwell, Archts., Memphis.

Tenn., Memphis.—Karchmer Bros. let contract to S. Maikin, Memphis, to erect residence; cost about \$5000; Mahon & Broadwell, Archts., Memphis.

Tenn., Memphis.—M. Rosenbaum, 159 S. Main St., has plans by and let contract to Edward Miles, P. O. Box 424, Memphis, to erect residence at 1960 McLemore Ave.; 32x76 ft.; wood and brick; shingle roof; electric lights; cost \$5000; low pressure steam heat \$400. Address Mr. Miles. (Lately noted.)

Tenn., Carlton.—Carl Stephens, Dublin, Tex., has contract to erect residence.

Tenn., Dallas.—Chas. Saville let contract to Mr. Beaver to erect residence; brick and hollow tile; shingle roof; hot-air heat; cost \$7000; H. B. Thompson, Archt., Dallas.

Tenn., El Paso.—H. G. Platt let contract to Newman & Hadfield, El Paso, to erect 5-room bungalow; cost \$3500.

Tenn., El Paso.—Dr. A. B. Roberts let contract to Newman & Hadfield, El Paso, to erect residence at Dallas and Montana Sts.; 30x40 ft.; brick; shingle roof; hardwood floors; hot-air heat; electric lights from city plant; cost \$4000. (Newman & Hadfield lately noted to erect dwelling.)

Tenn., Fort Worth.—J. B. Daniels let contract to C. A. Annis, Fort Worth, to erect residence; 1 story; 7 rooms; cost \$3000.

Tenn., Fort Worth.—A. Yamada let contract to Anderson & Wallace, Fort Worth, to erect two 9 and 10-room 2-story brick residences at 1650 and 1658 W. Magnolia Ave.; cost \$26,500.

Tenn., Fort Worth.—Felix Z. Gaither let contract to C. H. Messer, Fort Worth, to erect 9-room 2-story frame residences at 1633 Washington Ave.; cost \$3000.

Tenn., Galveston.—P. J. Clarke let contract to M. Roitzsch, Galveston, to erect residence

on 33d St.; 2 stories; Stowe & Stowe, Archts., Galveston.

Tenn., Rule.—D. E. Verner let contract to F. M. Jackson to erect 9-room residence.

Tenn., Wichita Falls.—Burton A. Stayton let contract to W. D. Shell, Wichita Falls, to erect residence; 5 rooms; frame; Chas. J. Fox, Archt., Wichita Falls. (See Machinery Wanted—Building Material.)

Tenn., Houston.—Farmers' Warehouse Co. let contract to A. T. Schmidt & Son, Houston, to erect shed; 70x40 ft.; cost about \$11,000.

SCHOOLS

Ky., Louisville.—Board of Education let contract to G. R. Gregg, Louisville, to erect frame bleachers on athletic field in rear of administration building; 34 ft. long; 8 tiers high; concrete footings and walls; cost \$3000; J. E. Henry, Archt., 8th and Chestnut Sts., Louisville. (Lately noted.)

Ky., Webster Groves.—Loretto Sisters let contract to John Grewe Construction Co., St. Louis, to erect buildings for Loretto Academy; 115x220, 100x48 and 51x56 ft.; fireproof; composition, gravel and slate roofs; concrete and wood floors; cost \$175,000; steam heat \$25,000; electric lights \$4000; also let contract to Mechanics' Planing Mill Co., St. Louis, for mill work; Barnett, Haynes & Barnett, Archts., St. Louis. (Lately noted.)

Okl., Haskell.—County Commrs. let contract to J. P. Rowley, Muskogee, Okla., to erect negro school; cost \$1617; completion by Jan. 3.

Okl., Park Hill.—Cherokee Training School let contract to A. F. Krummel, Muskogee, Okla., to erect dormitory; 2 stories; 40x70 ft.; steam heat; cost \$14,000; W. T. Conboy, Archt., 311 M. St. N. W., Washington, D. C.; M. M. Griffith, Supt.

Tex., Denton.—Regents of College of Industrial Arts let contract to Gilsonite Construction Co., St. Louis, to erect two 4-story wings to academic arts building; 50x82 ft. each; fireproof; reinforced concrete and face brick; Barrett specification roof; reinforced concrete floors; steam heat from central plant; passenger elevator; cost \$78,000; Endress & Watkins, Archts., Austin and Houston, Tex.; construction begins Nov. 1. (Noted in Sept.)

Tex., Gatesville.—State Juvenile Training School let contract to C. S. Tucker, Gatesville, to erect hospital building and home cottage; cost \$15,000 and \$10,000 respectively; 2 stories; fireproof; reinforced concrete; Roy E. Lane, Archt., Waco. (Noted in Sept.)

Tex., Nacogdoches.—School Board let contract at \$25,500 to W. P. Barry, Lufkin, Tex., to erect high school, and at \$8000 to Lane & Co. for heating; C. H. Page & Bros., Archts., Austin. (Lately noted.)

Tenn., Orange.—Orange county let contract to D. O. Bennett, Orange, to erect lately noted school on Lake St.; 65x66 ft.; 2 stories; brick; felt and gravel roof; wood floors; steel fire-escapes; cost \$500; A. J. Miller, Archt., Orange. (See Machinery Wanted—Building Materials.)

Tenn., Palestine.—City let contract to A. W. Flynt, 906 Taylor St., Fort Worth, Tex., to erect school; reinforced concrete; paper roof; wood on concrete floors; 125x15 ft.; cost \$65,000; Sanguinet & Staats, Archts., Fort Worth. (Other contracts lately noted.)

Tenn., Rio Grande.—Sam P. Vale let contract to R. D. Ledbetter, Donna, Tex., to erect school; 2 stories; 51x70 ft.; cost \$350; brick; metal roof. (Lately noted.)

Va., Lynchburg.—Virginia Episcopal School, Inc., has plans by Frederick H. Brooke, Telegraph Bldg., Washington, D. C., and let contract to J. P. Pettyjohn & Co., Lynchburg, to erect school building for boys; 72x107 ft.; 3 stories and basement; accommodations for 65 to 70 boys; brick with stone trimming; slate roof; wood floors; steam heat; electric lights; cost about \$57,000. Address Rev. Robt. C. Jett, Reusens, Va.

Va., Richmond.—School Board let contract to J. T. Nuckles, Richmond, to erect and auditorium; brick and reinforced concrete; slate roof; concrete floors; fan system hot-air heat; cost \$90,000; Carnal & Johnston, Archts., Richmond.

W. Va., Elkhorn.—Board of Education of Elkhorn Dist. let contract at \$2000 to H. A. Lucas, Kimball, W. Va., to erect 2 additional rooms to colored school; Dr. S. H. Neil, Pres. of Board; plans by R. Austin, Elkhorn, call for addition 2 stories; 31x22 ft.; stone and brick; asbestos roof; white pine floor. Address T. A. Little, Maybury, W. Va. (Lately noted.)

MISCELLANEOUS

D. C., Washington.—Market.—Washington Market Co. let contract to Samuel J. Prescott Co., S. 14 13th St. N. W., Washington, to remodel 3-story brick market; cost \$10,000. (Lately noted.)

STORES

Ark., Portland.—E. J. Camak has plans by and let contract to W. R. Terry, Hamburg, Ark., to erect 2 store buildings on Main St.; 20x30 ft.; brick; galanite roof; wood floors; wood heaters; Perkins gas light to cost \$65 (not purchased); cost \$2000 to \$2500 each; materials purchased. (Previously noted damaged by fire.)

Fla., Leesburg.—M. H. Goethe let contract through W. H. Carr, Archt., Leesburg, to erect theater on Clayton St.; 42x86 ft.; metal roof; wood floor; cost \$5000; heating plant \$500; lighting plant \$700; J. W. Barrett, Archt., Athens. Address contractor. (Previously noted.)

Mo., St. Louis.—E. J. Weiss let contract to T. Segel, St. Louis, to erect addition to moving-picture theater at 1618 Market St.; cost \$4000.

Va., Norfolk.—Arcadian Realty Co. let contract to Nash-Jones Co., Norfolk, to erect Virginian Theater on Granby St. between Freemason and Charlotte Sts.; 1 story; brick and steel; 160x55 ft.; 21-ft. entrance and lobby; Barrett roofing; cement floors; stores on either side; marble lobby and foyer; steam heat; air washing system; seating capacity 1500; cost \$20,000; Neff & Thompson, Archts., Norfolk. (Previously noted.)

Ga., Atlanta.—P. A. Acklen let contract to E. R. Barmore, Atlanta, to repair building at 25 N. Boulevard.

Ga., Camilla.—Dr. E. A. Newson let contract to O. B. Hines & Co., Box 303, Albany, Ga., to erect store, office and lodge building; 3 stories; brick; stone and plate-glass front; 26x35 ft.; the roof; terrazzo or tile floors; electric lights; cost \$7000; Thos. M. Campbell, Archt., Augusta.

Ky., Hickman.—W. R. Swift let contract to J. J. Jones, Union City, Ky., to erect 2-story brick business building.

Ky., Lexington.—Miss Margaret Price let contract to erect 3-story business block on N. Mill St.; cost \$4000.

N. C., Rocky Mount.—Joyner & Rowland let contract to S. S. Toler, Rocky Mount, to erect 3-story store building; will be occupied by R. E. Quinn Furniture Co.

Okl., Clinton.—White & Smith Hardware Co. let contract to erect business building; 2 stories; brick; 50x100 ft.

Tex., Austin.—C. A. Dahlrich has plans by Leslie N. Iredell, Austin, and let contract to A. A. Mundt, Austin, to erect business building; 2 stories and basement; brick; 140x130 ft.; cost \$5,000; also let contract to A. E. Hancock, Austin, for electric wiring and John L. Martin for plumbing.

Tex., Plainview.—Dr. A. H. Lindsay let contract to erect 1-story brick business building; 25x70 ft.

Va., Norfolk.—Athenian Realty Co. let contract to erect theater with stores on either side of entrance. (See Theaters.)

THEATERS

Ga., Athens.—Mrs. A. H. Talmadge let contract to J. W. Watson & Son, Athens, to erect theater on Clayton St.; 42x86 ft.; metal roof; wood floor; cost \$5000; heating plant \$500; lighting plant \$700; J. W. Barrett, Archt., Athens. Address contractor. (Previously noted.)

Mo., St. Louis.—E. J. Weiss let contract to T. Segel, St. Louis, to erect addition to moving-picture theater at 1618 Market St.; cost \$4000.

Va., Norfolk.—Arcadian Realty Co. let contract to Nash-Jones Co., Norfolk, to erect Virginian Theater on Granby St. between Freemason and Charlotte Sts.; 1 story; brick and steel; 160x55 ft.; 21-ft. entrance and lobby; Barrett roofing; cement floors; stores on either side; marble lobby and foyer; steam heat; air washing system; seating capacity 1500; cost \$20,000; Neff & Thompson, Archts., Norfolk. (Previously noted.)

WAREHOUSES

D. C., Washington.—Railway Terminal let contract to Daniel Realty Co., 1416 F St. N. W., Washington, to erect 1-story brick warehouse on Rhode Island Ave. between 5th and 6th Sts. N. E.; cost \$5500; A. T. Rose, Archt., Washington.

Mo., Kansas City.—Marshall Oil Co. let contract to Gray Constr. Co., O'Rear-Leslie Bldg., Kansas City, to erect warehouse; 1 story; 100x113 ft.

Mo., Kansas City.—Lonsdale Bros., 520 Bryant Bldg., Kansas City, have contract to remodel warehouse at 16th and Walnut Sts.; cost \$11,000.

Okl., Chickasha.—Doughty-McDonald Co., 3d St. and Choctaw Ave., let contract to O. Coffman, Chickasha, to erect warehouse at Choctaw Ave. and 5th St.; brick; 75x150 ft.; basement; about 17,000 sq. ft. floor space; sprinkling system; completion by Dec. 31.

Tex., Fort Worth.—Waples-Platter Grocer Co. let contract to Buchanan & Gilder, Fort Worth, to erect 1-story brick warehouse on E. Front St.; cost \$15,000. (Previously noted.)

Prices and manufacturers' samples of building materials.

Building Materials.—D. O. Bennett, Orange, Tex.—Prices on 175,000 No. 1 kiln run brick, 1 car Portland cement, sash and doors (cypress), double glaze glass 10x18 in., 175 lbs. lime, wrought-iron fire escapes, gravel, sand and reinforcing, coal tar pitch, white Portland cement per barrel, metal lath, iron lintels and stirrups, all sizes.

Building Material.—George Bailey, Gen. Contr., P. O. Box 245, Aberdeen, Miss.—Dynamo, etc., to furnish electric lights, etc., for residences. (See Water System, etc.)

Building Materials.—E. C. Angell, Lakeland, Fla.—Prices on Carey roofing, rolling partitions, Georgia brick, white sand-lime brick and iron columns for 2-story brick store.

Building Materials.—Robt. E. Newton, Gainesville, Tex.—Addresses of manufacturers of electric candy-making machines.

Canal Excavation.—Dept. of Interior, U. S. Reclamation Service, A. P. Davis, Ch. Engr., Washington, D. C.—Bids at office U. S. Reclamation Service, Mills Bldg., El Paso, Tex., until Nov. 17 for excavation of Leasburg Canal and Piechano Branch Canal, about 162,000 cu. yds., in vicinity of Hill, N. M., and San Elizario Feed Canal, about 54,000 cu. yds., near Ysleta, Tex.; for particulars address U. S. Reclamation Service, El Paso, Las Cruces (N. M.), Denver or Washington.

Cans (Garbage).—E. E. Lindsey, care Rome Soil Pipe Mfg. Co., Rome, Ga.—Prices on zinc or iron water-tight garbage can with cover, for kitchen refuse, Georgia State Sanitarium.

Cans (Tin).—Florida Insecticide & Fungicide Co., J. G. Grossenbacher, Plymouth, Fla.—Prices on 1, 5 and 10 gal. tin cans; for plant Apopka, Fla.

Cement.—See Building Materials.—Krahl Construction Co.

Cement.—See Building Materials.—D. O. Bennett.

Chairs.—Williams & Bell, Murfreesboro, Tenn.—Prices on directors' chairs, waiting-room chairs, cashier's roll-top desk and chair for bank, all mahogany.

Columns (Iron).—See Building Materials.—E. C. Angell.

Concrete Basin.—Tri-Cities Water Co., Charleroi, Pa.—To build reinforced concrete settling basin at filtration plant; Chester & Fleming, Engrs., Union Bank Bldg., Pittsburgh, Pa., to prepare plans and specifications.

Cranes.—See Quarrying (Granite) Machinery.—Spavinaw Red Granite Co.

Crusher.—Roy C. Whayne Supply Co., 1401 Lincoln Bank Bldg., Louisville, Ky.—36-in. Simons disc crusher for pulverizing limestone.

Digging (Gravel) Machinery.—R. H. Green, Chrmn. Road Improvement Com., Covington, Tenn.—Machinery to dig gravel from pit and load it into wagon.

Doors (Cold Storage).—See Ice and Cold-storage Equipment.—A. L. Stokoe.

Drainers (Cellar, Automatic, Electric).—Empire Construction Co., Contr., Douglas, Ga.—Addresses of manufacturers of automatic electric cellar drainers.

Dredging.—Commrs. Young's Coulee Drainage Dist. of Vermilion Parish, V. L. Caldwell, Prest., Abbeville, La.—Bids until Nov. 1 to construct 200,000 to 250,000 yds. drainage canal; plans and specifications furnished by Engr. of Dist., on file in his office at Abbeville; forms for bidding furnished by Prest. Drainage Dist. Commrs.

Drills.—See Quarrying (Granite) Machinery.—Spavinaw Red Granite Co.

Drills (Diamond Core), etc.—Drill, care Manufacturers Record, Baltimore, Md.—Second-hand diamond core drill; also some diamonds.

Electric Fixtures.—Williams & Bell, Murfreesboro, Tenn.—Prices on 3-bracket electric fixtures for side wall in bronze, and single light fixtures for top of bank railing.

Electric Lamps.—C. H. Yates, Mgr. of Oak Ridge Farm, Oak Ridge, Va.—Prices on Mazda lamps in lots of 150 to 300, freight paid to Oak Ridge.

Electric Transmission Materials.—C. H. Yates, Mgr. of Oak Ridge Farm, Oak Ridge, Va.—Estimates (freight prepaid Oak Ridge on Southern Ry.) on following: 200 25-ft. poles, 7 in. at top, long-leaf pine; 200 4-pin crossarms, complete with locus pins, galvanized; iron braces, 12x14 in., through bolts, carriage bolts; square and round washers and lag screws; 900 D. P. S. G. porcelain insulators, 2-15 K. W. (100-110 V.) type H. G. E. transformers (2200-220 V.); 7000 lbs. No. 6 T. B. W. P. wire; 200 ft.

1/2-in. stranded galvanized guy wire; 50 3-bolt guy clamps; 24 Matthews screw guy anchors; 50 composition high-tension strain insulators; 6 triple pole multi-gap lightning arrestors; all for pole line service.

Electrical (Transmission) Machinery.—Newton Electric Co., Easton, Md.—Prices on wire, poles, crossarms, insulators, transformers, etc., for transmission line.

Electric-light Plant.—W. F. Sumpter, Gen. Contr., P. O. Box 245, Aberdeen, Miss.—Dynamo, etc., to furnish electric lights, etc., for residences. (See Water System, etc.)

Electric-light Plant.—D. B. Musser, Atkins, Va.—In market for second-hand dynamo for 300 lights, or would consider second-hand cheap equipment for plant.

Electric-light Plant.—Wiley W. Gibson & Son, Mater, Ky.—Electric-light plant machinery, including engines and boilers.

Electrical Machinery.—See Candy Machinery.—Robt. E. Newton.

Electrical Motors.—Southern Graphite Co., G. A. Mattison, Prest., Ashland, Ala.—Prices on electrical motors in 25, 50 and 75 H. P. units.

Elevator (Freight, Electric).—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids opened Nov. 16 to furnish and install electric-driven freight elevator, schedule 8934, delivery New Orleans.

Elevator.—Landers Lumber Co., El Paso, Tex.—Prices on hand elevator for 2-story office and warehouse building.

Engine.—See Quarrying (Granite) Machinery.—Spavinaw Red Granite Co.

Engine and Boiler.—See Pump, etc.—Jacob C. Pugh.

Engine (Hoisting) and Boiler.—North State Lumber Co., Box 464, Charleston, S. C.—Second-hand 7x10 or 8x10-in. double-drum double-cylinder hoisting engine with boiler; to pass Hartford inspection.

Engines (Hoisting).—Box 842, Charleston, S. C.—Double cylinder hoisting engine without boiler; cylinders not smaller than 9x12; state condition and price.

Engines.—See Electric-light Plant.—Wiley W. Gibson & Son.

Excavation.—A. L. Dabney, Engr., Porter Bldg., Memphis, Tenn.—Bids to construct 40,000 yds. small ditches in Yazoo Delta near Clarksdale; average depth 3 ft.; bottom 6 and 8 ft.

Fans.—See Building Materials.—Krahl Construction Co.

Filtration Plant.—Public Service Corp., Warren, O.—To invite bids for improvements, including additional filters, to filtration plant; Chester & Fleming, Hydraulic Engrs., Union Bank Bldg., Pittsburgh, Pa., to prepare plans, specifications, etc., and will furnish information.

Fire Escapes.—See Building Materials.—D. O. Bennett.

Food Supplies, etc.—A. Hayem Fils Aine (purveyor for food products), 16 Rue Bertheaux-Dumas, Neuilly-s-Seine, Paris, France.—Correspondence with American manufacturers of provisions, food supplies and general products for army use.

Grading.—Dept. of Interior, Andrus A. Jones, First Asst. Secy., Washington, D. C.—Bids until Nov. 17 on labor and appliances for grading Gore Blvd., Lawton, Okla.; copies of plans and specifications obtainable on application to Chief Clerk of Dept., or to R. P. Sanders, Commr. Public Properties, Lawton.

Hardware.—See Machine Tools, etc.—Jayne Arthur Marques.

Hangers.—See Building Materials.—Krahl Construction Co.

Heating Plant.—Rev. Jas. T. Tartt, pastor First Baptist Church, Alpine, Tex.—Prices on hot-air heating plant for \$15,000 church.

Heating.—L. B. Donehoo, Seymour, Tex.—Prices on boiler and heater for steam heat in \$14,000 church building.

Heating Plant.—City Board of Education, J. W. Patrick, Chrmn., Nashville, Tenn.—Bids until Nov. 16 to furnish and install heating plant in Clemmons School, to be built at Waverly Pl.; plans obtainable from Russell E. Hart, Archt., 900 Stahlman Bldg.

Ice and Cold-storage Equipment.—A. L. Stokoe, Bay St. Louis, Miss.—Cork insulation, ice chutes and cold-storage doors for plant at Gulfport, Miss.

Ice Plant.—Charleston Engineering & Contracting Co., Charleston, S. C.—Catalogs and full information on ice manufacture, estimates on cost of plant, etc.

Incliners.—E. E. Lindsey, care Rome Soil Pipe Mfg. Co., Rome, Ga.—Correspond-

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

"WANTS"

Advertising Articles.—Furio Viola y Cia, commission merchants, Buenos Aires, Argentina, S. A.—Interested in articles used in advertising, such as small steel objects, knives, penknives, saving boxes, button-holders, fans with wooden handles, lithographs, almanacs, cases for almanacs, etc.; view to representation.

Alcohol (Wood) Plants.—J. A. Woolfolk, Republic Bldg., Louisville, Ky.—Data on manufacture of denatured alcohol from wood waste and farm products, including cost per gal. of manufacturing, and prices on machinery.

Bags (Corn, Jute).—T. B. Williams, Secy. Board of Trade, Waido, Fla.—Addresses of manufacturers of 100-lb. jute corn bags.

Bagging, Burlap and Bags.—Imperial Bagging Co., Norfolk, Va.—Wants bagging, burlap and bags. State quantities and lowest cash prices.

Bakery Equipment.—Stroehmann's Vienna Bakery, Wheeling, W. Va.—Bids by Feb. 1 on machinery for bakery at Huntington, W. Va.; make bread, cakes and pies.

Barrels.—L. W. Jenkins, Spartanburg, S. C.—Addresses of manufacturers of barrels for shipping dust-down sweeping compound.

Barrels (Wood).—Florida Insecticide & Fungicide Co., J. G. Grossenbacher, Plymouth, Fla.—Prices on 25-gal. and 50-gal. liquid-tight wood barrels; for plant Apopka, Fla.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

ence with manufacturers of small or medium-sized incinerators (wanted for Georgia State Sanitarium.)

Iron Keel Blocks, etc.—Panama Canal, F. C. Boggs, Gen. Purchasing Officer, Washington, D. C.—Bids until Nov. 17 to furnish cast-iron keel blocks, cast-iron bilge-block slides, garbage incinerator, drill press, lathe, steel tubing, spring plates, nails, rivets, staples, pipe fittings, water closets, sheet lead, holystones, curving brushes, plate glass, air-brake hose, leather and lard oil; blanks and general information relating to this circular (No. 988) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and Fort Mason, San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

Kettles (Steam Jacket), etc.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids until Nov. 9 on 40-gal. steam jacketed kettles and steel at Navy yard, Boston. Apply for proposals navy pay office, Boston, or to Bureau.

Lathe.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids opened Nov. 16 on burnishing and trimming lathe, schedule 8838, delivery Norfolk.

Loading Machinery.—See Digging (Gravel) Machinery.—R. H. Green.

Locomotive.—Harvey Co., 113 South St., Baltimore, Md.—Standard-gauge saddle-tank locomotive, nearly delivery, equipped with airbrake, 75,000 to 100,000 lbs.; 4-wheel connected.

Locomotives.—G. A. J. Miliar, Room 62, Drake Bldg., Easton, Pa.—Second-hand 30-in.-gauge locomotive.

Logging Machinery.—Fishing Creek Timber & R. R. Co., R. A. Stamper, Prest., Hobgood, N. C.—Will install machinery for cutting and moving logs. Address Mr. Stamper at Hobgood, or H. C. Bridgers, Tarboro, N. C.

Lumber.—See Building Materials.—Krahl Construction Co.

Lumber (Pine).—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids opened Nov. 9 on 100,000 ft. select white pine, schedule 8932, delivery Washington.

Machine Tools, etc.—Jayme Arthur Marques, Engenhiero, Travessa do Caes do Tojo, 10 a 18, Lisbon, Portugal.—Interested in American machinery, etc., including machine tools and hardware.

Manufactures.—French-American Export Association, Arthur Day, Gen. Mgr., 52 Wall St., New York (Paris office, 73 Blvd. Malesherbes).—Interested in first-class American manufactures; view to representation in France.

Marble.—See Building Materials.—Krahl Construction Co.

Metals, etc.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids opened Nov. 23 on 2850 lbs. bar brass, miscellaneous brass tubing and copper tubing, schedule 8944; 25,000 lbs. steel sheets and miscellaneous screws, schedule 8943—all delivery Washington; also 19,450 lbs. ribbed steel floor plates, schedule 8946, delivery New Orleans.

Metal-working Machinery.—See Woodworking Machinery, etc.—J. L. Bolton.

Motors (Aeronautical).—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids opened Nov. 30 on 7 motors for aeroplanes, schedule 8940, delivery Washington and Pensacola.

Mouldings.—Basic Furniture Co., Waynesboro, Va.—Addresses of manufacturers of embossed and carved mouldings.

Needles (Sailmakers', Mattress, etc.).—Joseph Gregory, care Nifty Mfg. Co., Seat Pleasant, Md.—Addresses of manufacturers of large needles, such as sailmakers', roping or mattress needles.

Oil (Cotton).—Gerhard Polak, Amsterdam, Holland.—Interested in prices (from independent oil refineries) on cotton oil for export to Europe.

Oil Mill Machinery.—C. M. Jernigan of Alabama Oil & Guano Co., Opelika, Ala.—Names and addresses of manufacturers of peanut-oil machinery.

Paving.—Chas. E. Boiling, City Engr., Richmond, Va.—Bids until Oct. 26 to lay granolithic paving; proposal forms obtainable on application.

Paving.—City Commrs., Huntington, W. Va.—Bids until Nov. 8 to pave sections of

6th, 11th and 13th Aves., etc.; profiles, specifications, etc., on file with A. B. Maupin, City Engr.

Paving.—Board of Control, Norfolk, Va.—Bids until Nov. 4 to reconstruct, repair and repave Granby St. from Main to Queen St.; City Council appropriated \$6000.

Paving.—Board of Public Works, D. B. McKay, Chrmn., Tampa, Fla.—Bids until Nov. 2 to construct sheet cement sidewalks.

Paving.—Mayor and City Council, Cumberland, Md.—Bids received until Oct. 25 to grade, curb and pave Oldtown Rd. from Maryland Ave. to South St.; plans and specifications obtainable from Jas. P. Gaffney, City Engr., for \$10.

Paving.—J. A. Harper, City Secy., Corsicana, Tex.—Bids until Nov. 2 to pave sections of N. Benton St., E. 5th Ave. and W. 7th Ave.; each bidder to bid separately on following materials: Bitulithic pavement on 5-in. gravel concrete foundation; brick pavement on concrete foundation; asphalt macadam; asphalt concrete; rock asphalt; concrete pavement; concrete curbs; concrete gutters 18 in. wide; concrete gutters 24 in. wide; combination concrete curbs and gutters, gutter 24 in. wide and face of curbs 8 in.; specifications on file with City Secy.

Paving.—City Council, W. B. Moore, City Clerk, Miami, Fla.—Bids until Nov. 8 to grade and pave with asphaltic concrete and binder course on concrete foundation about 15,000 sq. yds. streets; also grade and pave with sand and asphaltic oil about 100,000 sq. yds. streets; plans and specifications on file with City Clerk.

Paving, etc.—City of Greenwood, S. C., A. S. Hartzog, Mayor.—Bids until Nov. 19 to construct about 60,000 sq. yds. street paving, 10,000 sq. yds. cement gutters, 12,000 lin. ft. granite curb, 10,000 lin. ft. 12 to 20-in. storm sewers, 25 manholes, 30 intake basins, etc.; plans and specifications at office of C. P. Ballenger, Engr., Greenwood.

Penknives, etc.—See Advertising Articles.—Furio Viola y Cia.

Pharmaceutical Supplies, etc.—Felix A. Aghion, 8-10 Place Edouard VII, Paris, France (supplying Russian Red Cross).—Prices by cable or letter from manufacturers on large quantities of chemical and pharmaceutical products; if possible, give price on goods shipped to and delivered London, payment against documents, London, Lloyd's Bank; articles desired include following: Salicylate de bismuth, chlorhydrate de cocaine, chlorhydrate de quinine, pyramidon, vococaine, feuilles de sene de l'Inde, dermatol, apomorphine, keroforme, feuilles de sauge, acide lactic, jalap, racine cascara sagrada, etc.; medical thermometers—German pattern—20 to 25 centimeters in length, French graduation in centigrades to the 30th, etc.; "Aiguilles pour injection hypodermiques de 20 m-m, de long sur 5-10 d'épaisseur, ditto 25 m-m by 5 and 6-10, ditto 25 m-m by 7-10." (Sample of hypodermic syringe available on application to Manufacturers Record, Baltimore; Mr. Aghion will want 50,000 of one centimeter cube capacity and 20,000 of two centimeter cube capacity.)

Pipe.—Southern Graphite Co., G. A. Matison, Prest., Ashland, Ala.—Prices on second-hand wrought or cast-iron pipe, 4-in. and 6-in. diam.

Pipe (Dredge) and Couplings.—See Pump, etc.—Jacob C. Pugh.

Pipe (Wrought).—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids opened Nov. 23 on 2000 ft. wrought pipe, schedule 8943, delivery Washington.

Pipe Organ.—Rev. Jas. T. Tarr, pastor First Baptist Church, Alpine, Tex.—Prices on pipe organ for \$15,000 church.

Pipe Threader.—Lebow Brothers Co., Charleston, W. Va.—Pipe-threading machine, 8- or 10-in. capacity; good condition, second-hand.

Plumbing Supplies, etc.—Scott-Quinn Plumbing Co., Miami, Fla.—Catalogues and prices from manufacturers and jobbers of plumbing supplies, etc.

Provisions.—See Food Supplies, etc.—A. Hayem Fils Aine.

Pulleys (Steel Split).—See Woodworking Machinery, etc.—Elrod & Co.

Pump (Sand).—Will D. Alexander, Engr., 412 N. Graham St., Charlotte, N. C.—Data and prices from manufacturers on sand pumps for lifting sand from creek channel; pump to be direct-connected to gasoline engine and located on easily-moved floating hull.

Pump, etc.—Jacob C. Pugh, Engr. and Contr., P. O. Box 248, Norfolk, Va.—Centrifugal pump suitable for suction dredge work; size 6, 8 or 10 in.; also engine and upright

boiler large enough to drive pump at maximum capacity and approximately 1000 feet of riveted dredge pipe, with couplings, of sizes above; equipment must be in good condition and located near Norfolk.

Pump.—City of Houston, Tex., Ben Campbell, Mayor.—Bids until Oct. 29 to install fire pump for north side cotton sheds on turning basin; specifications and other details obtainable from E. E. Sands, City Engr.

Quarrying (Granite) Machinery.—Spavinaw Red Granite Co., F. L. Hughson, Prest., Vinita, Okla.—Prices on drills, pumps, engines, boiler, cranes, etc., and machinery for quarrying, polishing and stenciling granite.

Revetment, etc.—Levee Commrs. Orleans Levee Dist., Leigh Carroll, Prest., Suite 201, New Court Bldg., New Orleans, La.—Bids until Nov. 2 to construct following work in Fifth Dist., Orleans Parish: Canal St. Ferry to Algiers Sawmill, restoring wave-wash and repairing about 200 sq. yds. reinforced concrete revetment; S. P. R. R. Terminal to Naval Station, construction of wooden pecky cypress revetment, B. M. 19,000 ft., length 700 ft.; U. S. Naval Station to U. S. Immigration Station, enlarging and dressing river slope, reinforced concrete facing and toe wall, cu. yds. earth in embankment 600, in fill 1100, sq. yds. reinforced concrete 7400; U. S. Immigration to Huguet, restoring wave-wash and construction of wooden pecky cypress revetment, cu. yds. earth in embankment 5400, in cut 5000 ft. B. M., in revetment 212,000.

Road Construction.—R. H. Green, Chrnn. Road Improvement Com., Covington, Tenn.—Data on latest economical plan for graveling roads and cutting down grades for the gravel.

Road Construction.—R. H. Green, Chrnn. Road Improvement Com., Covington, Tenn.—Data on latest economical plan for graveling roads and cutting down grades for the gravel.

Road Construction.—Barry M. Hartle, Clerk, Hagerstown, Md.—Bids until Nov. 4 to construct 1.14 mi. State-aid highway upon or along road from Rohrersville toward Boonsboro; also 1.05 mi. from McReys Hill toward Mooresville; bids to be made on blank forms obtainable from State Roads Com., 601 Garrett Bldg., Baltimore; plans can be seen and forms of specification and contract obtainable for \$1.

Road Construction.—Buckingham County Commrs., Barry M. Hartle, Clerk, Buckingham, Va.—Bids until Nov. 1 to construct 26.21 mi. soil roads and grade 2.88 mi. road, latter between Wiggins and Buckingham; plans and specifications on file at Clerk's office, Buckingham, and at office State Highway Com., Richmond, Va.; specifications furnished on application to G. P. Coleman, State Highway Commr., Richmond, Va.

Road Construction.—Talbot County Commrs., Jos. B. Harrington, Clerk, Easton, Md.—Bids until Nov. 9 for constructing section of State-aid highway as follows: Concrete No. 359, 2.18 mi. from Trappe to Barber, shell construction; No. 360, 1 mi. from Bruceville to Windy Hill, shell construction; No. 361, 3 mi. from Easton toward Mathews, shell or macadam or concrete construction; No. 401, 1.06 mi. from Easton to Easton Point, shell or macadam or concrete construction; blank forms, etc., at State Roads Com., 601 Garrett Bldg., Baltimore.

Road Construction.—Houston County Board of Revenue, A. C. Crawford, Chrnn., Dothan, Ala.—Bids until Nov. 18 to construct roads as follows: 21 mi., Dothan to Granger; 10 mi., Dothan to Webb; 11 mi., Ashford to Gordon; plans, specifications, etc., obtainable from County Engr.

Rolls (Bending).—Ingalls Iron Works, Birmingham, Ala.—Set of bending rolls; 10 ft. or 12 ft. between housings and capable of bending up to 5-in. plate; prefers good second-hand roll if price is right.

Rond Construction.—Medina County Commrs., Court, Hondo, Tex.—Bids until Nov. 8 to construct 20 mi. gravelled road, extending north, south, east and west from Castroville; \$38,000 Medina County Dist. No. 2 road bonds available; contractor to employ home teams and labor; for plans, specifications, etc., address County Commr. H. E. Wurzbach, Cliff, Tex., or Committeeman Ed. Wurzbach, Castroville.

Roofing.—See Building Materials.—E. C. Angell.

Roofing.—Rev. Jas. T. Tarr, pastor First Baptist Church, Alpine, Tex.—Prices on slate roofing for church about 60x90 ft.

Seawall Construction.—Seawall Commissioners of Dist. No. 1, Hancock County, Chas. G. Moreau, Prest., Bay St. Louis, Miss.—Bids until Dec. 1 at office of Robt. L. Genin, Man St., Bay St. Louis, to construct concrete seawall and filling of same (bids to be submitted separately or jointly) on beach front of Waveland from Bay St.

Louis-Waveland dividing line to northeast line of Waveland Terrace; wall to be not less than 7500 ft. long or more than 8000 ft. long; bids to be mailed to Prest. of Com.; plans and specifications obtainable from Chas. G. Moreau, Bay St. Louis, for \$5.

Sewer-Disposal Plant.—City of Benito, John H. Lyons, Mayor.—Will receive bids until Nov. 24 to furnish material and construct sewer-disposal plant; plans and specifications at Mayor's office and obtainable from Engr. (A. T. Agar, San Benito, lately noted as Engr.) on payment \$5; Dan Jones and F. Campbell, Commrs.

Sewer Construction.—See Paving, etc.

Sewer Construction.—Sewerage Com., Chas. England, Chrnn., 904 American Bldg., Baltimore, Md.—Bids (addressed to Board of Awards) until Nov. 3 to construct Locust Point Interceptor and Maiden's Choice Run trunk sewer; sanitary contracts Nos. 166 and 167; No. 166 calls for 7750 cu. yds. earth excavation in trench, 500 lin. ft. 30-in. sewer, 2300 lin. ft. 27-in. sewer, 2200 lin. ft. 29x34-in. sewer and 100 cu. yds. brick masonry; No. 167 calls for 2800 cu. yds. earth excavation and 950 cu. yds. rock excavation in trench, 200 cu. yds. earth excavation in tunnel, 1200 lin. ft. 18-in. sewer, 2443 lin. ft. 15-in. sewer; bids until Nov. 3; specifications, plans, etc., at office Sewerage Com.

Sewer Construction.—City Council, W. B. Moore, City Clerk, Miami, Fla.—Bids until Nov. 8 to construct sewers as follows: Storm Sewer Dist. No. 1 on Ave. C being 20-in. vitrified-pipe sewer from 1st to 2d St., about 350 lin. ft.; 18-in. vitrified-pipe sewer from 3d to 2d St., together with short sections of intersecting sewers, inlets, inlet connections, manholes, etc.; Storm Sewer Dist. No. 2, being section of 42-in. x 36-in. concrete sewer at intersection of Hickman St. and Ave. C, also section of 48-in. x 36-in. concrete sewer at same intersection, about 50 ft. total, together with inlets, inlet connections, manholes, etc.; Storm Sewer Dist. No. 3, being 15-in. vitrified-pipe sewer on Ave. D from 20th to 19th St., about 316 ft.; also 24-in. vitrified-pipe sewer on Ave. D from 19th to 18th St., about 350 ft., and 30-in. x 30-in. concrete sewer on Ave. D from 18th St. to Miami River, about 364 ft., together with inlets, inlet connections, manholes, etc.; plans and specifications with City Clerk.

Shovel (Steam).—G. A. J. Miliar, Room 62, Drake Bldg., Easton, Pa.—Standard-gauge steam shovel, 1 or 1½ dipper; second-hand.

Soap (Laundry).—Florida Insecticide & Fungicide Co., J. G. Grossenbacher, Plymouth, Fla.—Addresses of manufacturers of cheap laundry soap; for plant Apopka, Fla.

Sprinkler System.—Port Commrs., F. W. Bruce, Chief Engr., Jacksonville, Fla.—Bids until Nov. 8 for sprinkler system to be installed in cotton compress and storage building under construction at Jacksonville; bidders to submit plans and specifications for completed installation; information obtainable from Chief Engr.

Steel.—See Kettles (Steam Jacket), etc.—Navy Dept.

Syringes (Hypodermic).—See Pharmaceutical Supplies, etc.—Felix A. Aghion.

Tags and Badges.—Board of Commrs., Memphis, Tenn.—About 10,000 licensed tags and badges; details obtainable from City License Collector; proposals until Oct. 26.

Tank and Tower.—W. A. McCord, Corinth, Miss.—Open bids Nov. 1 on metal pressure tank on tower, tank 3000 to 5000 gals. capacity, etc., for water and sewerage for Alcorn County Agricultural High School.

Tank and Tower.—Port Commrs., F. W. Bruce, Chief Engr., Jacksonville, Fla.—Bids until Nov. 8 for 50,000-gal. metal water tank on metal tower at municipal terminals; height 100 ft., measured from top of foundation to extreme bottom of tank; complete stress sheets and such detail drawings as will clearly show dimensions of all parts, method of construction, connections, etc., to accompany proposals; bidders to make proposals as follows: On their standard construction, using "H" sections for compression members in tower; using flat iron for tank proper; extra price for making roof of Ingots iron; bids include riser pipe and all steel work delivered and erected complete on foundations, to be furnished by Commission; information may be obtained from office of Chief Engr., Jacksonville.

Telephone Equipment.—Palmetto Telephone Co., E. L. Young, Engr., Fairfax, S. C.—Prices on telephone equipment, including 105-drop self-restoring drop switchboard, 30 to 40 telephones, wire, insulators, crossarms, brackets, pins, etc.

Thermometers (Clinical).—See Pharmaceutical Supplies, etc.—**Felix A. Aghion.**

Thermometers, etc.—**R. L. Bryan,** Zephyrhills, Fla.—Names and addresses of manufacturers of extra large thermometers, about $\frac{1}{2}$ ft.; also of manufacturers and importers of barometers.

Transmission Equipment.—See Electric Transmission Materials.—**C. H. Yates.**

Tubing (Brass and Copper).—See Metals, etc.—**Navy Dept.**

Ventilating System.—**Odell Hardware Co.,** Greensboro, N. C.—Interested in simple ventilating system for one floor of store room.

Water System, etc.—**W. F. Sumpter,** Gen. Contr., P. O. Box 245, Aberdeen, Miss.—Pneumatic water supply system (for residence), to include gasoline engine, pump, 1000-gal tank, dynamo for electric lights, plumbing fixtures, plumbing materials, etc.; give full description, quote prices f. o. b. Muldon, Miss.

Windows and Columns.—**Rev. Jas. T.**

Tartt, pastor First Baptist Church, Alpine, Tex.—Prices on windows and columns for \$15,000 church.

Wire Rope (Steel or Galvanized).—**G. A. J. Millar,** Room 62, Drake Bldg., Easton, Pa.—Second-hand $\frac{1}{2}$ and $\frac{3}{4}$ steel or galvanized wire rope.

Woodworking Machinery, etc.—**Elrod & Co., Erwin, Tenn.**—Automobile spoke lathes, 20-in. sand belter and a number of second-hand steel split pulleys.

Woodworking Machinery, etc.—**J. L. Bolton,** care Bennett's Hotel, Spartanburg, S. C.—Data and prices on machinery to manufacture wood and metal frames for door and window screens.

Woodworking Machinery.—**Alamance Lumber Co., P. S. Hutchins, Secy., Burlington, N. C.**—Prices on woodworking and cabinet machinery.

Zinc.—**Gerhard Polak, Amsterdam, Holland.**—Interested in prices on zinc for export to Europe.

RAILROAD CONSTRUCTION

RAILWAYS

Ark., Buffalo.—**St. Louis, Iron Mountain & Southern R. R.** (Missouri Pacific System) is considering plan for branch from Buffalo to Rush, 6 or 7 mi. E. A. Hadley, St. Louis, Mo., is Ch. Engr.

Ark., Gould.—The Gould Southwestern Ry. proposes to build an extension. W. H. Roberts Received at Gould.

Ky., Louisville.—Louisville, Henderson & St. Louis Ry. Co. has filed mortgage to secure \$5,000,000 of new bonds for refunding and other purposes. No extensive improvements are contemplated at present. R. N. Hudson is Pres't, and Gen. Mgr., at Louisville.

Ky., Paducah.—Paducah & Illinois R. R. Co. will build yards at Paducah early next spring. Chas. Broadbeck is Ch. Engr.

Md., Baltimore.—Philadelphia, Baltimore & Washington R. R. (Pennsy System) has bought 13 acres of land near the eastern city limits for probable enlargement of terminal facilities. J. C. Auten, Wilmington, Del., is Pr. Asst. Engr.

Mo., Joplin.—Construction of an interurban electric railway out of Joplin is under consideration by the Commercial Club and others. Committee on plan, A. S. Wilson, J. F. Lanier and Albert Schmidt.

Mo., Orrick.—Wabash R. R. is reported surveying for a revised line from Orrick to Missouri City, about 10 mi. A. O. Cunningham, St. Louis, Mo., is Ch. Engr.

N. C., Belmont.—Piedmont & Northern Lines have awarded contract to the Charlotte Construction Co. to build a branch from Belmont Junction to Belmont, 4 mi., the work to be complete within 45 days from Oct. 22. A sub-contract for grading is reported let to P. R. Huffstetler of Gastonia, N. C., and work is in progress. E. Thompson, Charlotte, is V. P. and Gen. Mgr.

N. C., Pineola.—Construction is started upon an extension of the East Tennessee & Western North Carolina Ry., which will finally reach Boone, N. C., about 18 mi., via Linville Valley and Grandfather Mountain. G. W. Hardin is Supt. at Johnson City, Tenn.

Okla., Depew.—Construction is reported be-

gun on the Sapulpa & Oil Field R. R. from Depew to Drumright, about 15 mi., with J. T. Lantry of Tulsa Ch. Engr. in charge of the company's forces, which are doing the work.

Oklahoma., Henryetta.—R. D. Long of Muskogee, is reported contemplating construction of an electric railway from Henryetta to several small towns. The Arbuckle Construction Co. of Oklahoma City is also reported in the field with a proposal to connect Henryetta, Rich Hill, Kusa, Dewar, Coalton, Nicholson's Switch, Blackston and Schulter with an electric railway about 8 mi. long.

Oklahoma., Sallisaw.—Company is reported organized to build the Sallisaw, McAlester & Southwestern R. R. Address Board of Trade.

Tex., Galveston.—Gulf, Colorado & Santa Fe Ry. will, it is stated, build a newly-located line for the Gulf & Interstate division from Port Bolivar eastward for about 25 miles, the line near the coast having been destroyed by the recent big storm. Surveys are being made. F. Merritt, Galveston, is Ch. Engr.

Tex., Jacksboro.—Gulf, Texas & Western Ry. is reported considering a possible extension to Fort Worth, about 35 or 40 mi. Benj. B. Cain, Dallas, Tex., is V. P. and Gen. Mgr.

Tex., Van Horn.—Van Horn Valley Railroad Co. is reported to have completed 15 mi. of grade for track-laying on its proposed 70-mi. railroad up Van Horn Valley to develop property of the Van Horn Valley Land Co. R. H. Owen, 511 Andrus Bldg., Minneapolis, Minn., is Pres't. R. Humphrey of Milwaukee, Wis., is also interested.

STREET RAILWAYS

Ala., Anniston.—Alabama Power Co. has been granted a franchise to build a street railway on Leighton Ave. from 6th to 7th St. to Highland Ave. to 6th St. F. H. Chamberlain is Gen. Mgr. at Birmingham, Ala.

Ga., Waycross.—Waycross Street & Suburban Ry. will by Nov. 1 begin construction of extensions to the Coast Line shops and Hebardville, respectively, a total distance of 2 mi. H. H. Burnett is Mgr.

American Enamelled Brick & Tile Co., 1182 Broadway, New York. Approximately 670,000 white, brown mottled, shade 2002, and colored "American" enamelled brick is reported to be the number of brick required to fill this order. The building is being erected by the Public-Service Corporation of New Jersey, for which George B. Post & Sons are the architects and the Hedden Construction Co. is the general contractor.

One of the Signs of Business Revival

In writing about the successful sale of a woolen mill property at New Bedford, Mass., held on October 19, J. E. Conant & Co., the auctioneers, states that the sale went so fast and there was so much competition and demand for every lot—real estate and machinery—that a few hours had elapsed before it could fully realize and comprehend all that took place, as rarely has a more successful sale from any point been carried through. The real estate brought within a few thousand of its assessed valuation, and the machinery sold for \$7000 more than its assessed valuation. The real estate was purchased by local interests and the bidders and purchasers of the machinery were widespread and from long distances.

Opens Another Southern Branch.

The James Ohlen & Sons Saw Manufacturing Co., manufacturers and repairers of solid and inserted tooth circular saws, mill, mulay, gang, drag, cross cut, band and hand saws, Columbus, O., write to the Manufacturers Record regarding the establishment of a new Southern branch at Mobile, Ala., as follows: "We have opened our new branch and are now shipping stock with which to supply the trade as far west as Texas, and expect to make the Mobile branch a convenience for the saw buyers in that particular territory. Some two years ago a branch was established in Atlanta, Ga., and proved an immediate success to the dealer and consumer alike. The Atlanta branch, as well as the Mobile office, is under the management of W. L. Scott, who will devote his time for the present between the two places. In the last four or five years branches have been opened at 2229 Olive St., St. Louis, Mo., under the management of William D. Quinn; 200 First St., San Francisco, Cal., and another at Portland, Ore. We feel that by establishing these branches we are not only able to serve the trade promptly, but we have more of an opportunity to grow. New styles of saws have been made necessary by this expansion, and we have been very much gratified indeed with the success we have had along this line. It is our aim to serve the jobber promptly as well as the retailer, mill supply house and consumer."

More Refrigerating Plants for the South.

Under date of October 19th, the York Manufacturing Co., York, Pa., writes that since its last report, issued September 20th, 36 installations of York refrigerating and ice-making machinery and equipment have been made, including those for the following Southern concerns: The Germania Brewing Co., Charleston, S. C., a 10-ton vertical single-acting belt-driven refrigerating machine and high-pressure side complete; including 12 "Shipley" flooded atmospheric ammonia condensers, also changing present freezing system to the York Coreless raw-water system; Mutual Cold Storage Co., Ltd., Broadway, Va., one 15-ton vertical, single-acting belt-driven enclosed-type refrigerating machine and high-pressure side complete, also a 6-ton raw-water flooded freezing system and 4500 feet of 2-inch direct expansion piping for apple storage room; Harris Sanitary Creamery Co., Fort Worth, Texas, one 4-ton vertical refrigerating machine and high-pressure side complete; D. E. Livingston, Kansas City, Mo., for the Robert McClinton Restaurant, one 12-ton vertical single-acting belt-driven enclosed-type refrigerating machine and high-pressure side complete; E. W. O'Hanlon, Inc., Winston-Salem, N. C., one 2-ton vertical refrigerating machine and high-pressure side for soda fountain operation; H. W. Armbrrecht, Winters, Texas, one 2-ton vertical single-acting belt-driven enclosed-type refrigerating machine and high-pressure side complete; Dewey Hotel, Washington, D. C., one 4-ton vertical refrigerating machine and high-pressure side complete; H. T. Church, Jacksonville, Fla., one 2-ton vertical refrigerating machine and high-pressure side, and Wallis Cafe, Washington, D.

C., one 6-ton vertical refrigerating machine and high-pressure side complete, also a 1-ton freezing system.

Bolinders Oil Engines in Demand.

Over 11,000 Bolinders oil engines, producing 350,000 horse-power, are said to be working successfully at the present time in all parts of the world. While the Bolinders Company, W. R. Haynie, manager, 20 Church St., New York, the United States branch of J. & C. G. Bolinders, Ltd., of Stockholm, Sweden, states that a limited number of this type of engine is employed in this country, it is only because of their recent introduction, and it is believed that the popularity of Bolinders low-pressure heavy-oil engines will soon be as pronounced in America as it is abroad. The record of this two-cycle, hot-bulb, heavy-oil engine is reported to be attracting considerable attention in the marine service of this country, and is reflected in the following recent Bolinders engine installations: Equipment of six steel sailing schooners with Bolinders direct reversible marine engines. These vessels will be built by the Toledo (O.) Shipbuilding Co. for the Smith Shipping Co. of New York, and will be used in the coastwise and Transatlantic trade. Twelve 600-horse-power Bolinders oil engines for four oil tankers belonging to Christoffer Hannevig of Christiania, Norway, now under construction by the Baltimore Dry Dock & Shipbuilding Co., Baltimore; one 160 horse-power direct reversible marine engine in tug "Marie L. Hanlon" and one 120 horse-power direct reversible marine engine in pilot schooner "Grace S." both of San Francisco; two 160 horse-power, two-cylinder direct reversible marine engines for a coastwise barge of J. B. King & Co., New York; two 320 horse-power, four-cylinder stationary engines for the municipal power plant at Perth Amboy, N. J.; one 320 horse-power, four-cylinder direct reversible marine engine for the Standard Transportation Co.'s barge No. 62, New York; two 75 horse-power, two-cylinder stationary engines to run in parallel, direct connected to two 90-cycle alternators, for the Borough of Butler, N. J., and many others.

Bolinders oil engines are illustrated and described in several catalogues issued by the company's New York branch. The latest of these catalogues deals with Bolinders engines and their use in auxiliary trading vessels; another illustrates and describes Bolinders heavy crude oil engines for all stationary work, containing details of construction and specifications of standard types which are made in one, two and four-cylinders, from 5 to 500 horse-power, and another puts forth all the various manufacturers and branches of Bolinders works, showing the scale of the company's development during the past 25 years. This catalogue also contains records of various exhibitions at which its factory was represented from time to time.

TRADE LITERATURE.

Nagle Corliss Engines.

Testimonials regarding its Corliss engines have been compiled and published in book No. 24 by the Nagle Corliss Engine Works, Erie, Pa., with a view to giving intending purchasers a knowledge of the high class of customers using its products. This concern manufactures Corliss, four-valve, plain slide-valve, simple, tandem and cross-compound steam engines, air compressors and gas engines for all kinds of service.

Holophane Refractors.

Fundamentals of street lighting as relating to refractors and their use are discussed in a pamphlet recently issued by the General Electric Co. of Schenectady, N. Y. The pamphlet describes and illustrates in general the holophane bowl and band types of refractors as produced by the company and contains diagrams showing light distribution of holophane refractors and other information dealing with the advantages of this type of outdoor lighting unit.

Cornell Rolling Steel Doors.

A pamphlet has been issued by the rolling steel shutter department of the Cornell Iron Works, 26th St. and 11th Ave., New York, which contains a few installations of Cornell rolling steel shutters. Economy of space and adaptability to the largest openings are among the advantages claimed for this self-closing type of fireproof door. The doors are operated by hand chain and gearing and are provided with an automatic closing device controlled by fusible link. They are used in residences, office buildings,

INDUSTRIAL NEWS OF INTEREST

Seeking Manganese Properties.

A first-class manganese ore proposition is being considered by persons who expect to make a tour of inspection of the Southern States about November 1st. Those interested may secure further information by addressing Box 280, Ishpeming, Mich.

Wants Manufacturers' Samples.

Martin C. Parker, who has opened an office for the practice of architecture at 205 Alexander Building, Beaumont, Texas, writes to the Manufacturers Record that he would like to have prices and manufacturers samples of products relating to his profession and the building trade generally.

Sells Coosa Cement in Mississippi.

H. M. Blanchard, sales manager of the Coosa Portland Cement Co., American Bank Building, Birmingham, Ala., advises that J. M. Clark has joined the company's sales force and will travel the Mississippi territory regularly in the interest of "Coosa." Mr. Clark, who has been manager of the Clark Building Material Co. of Jackson,

Miss., has a host of friends in Mississippi, where he has lived for a number of years.

Two Pump Companies Consolidate.

Organization of the Hill Pump Co., Anderson, Ind., with \$250,000 capital stock, by G. B. Ayres, president; Hugh Hill, vice-president; F. C. Hill, treasurer; E. H. Hill, secretary, and W. P. Scherumann, general manager, has been effected to take over the Hill Machinery Co. and the Hill-Tripp Pump Co. The new company will continue the lines of both of its predecessors, including the Hill-Tripp centrifugal pumps of the deep-well, impeller and multi-stage high-lift types, as well as the complete line of powerhouse pumps, steam and electric deep-well pumps and double-acting pumps of the Hill Machinery Co.

Secures Large Enamel Brick Contract.

Through its Newark representative, A. S. Reid & Co., the large enameled brick contract for the Park Place Terminal Building, Newark, N. J., has been awarded to the

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6 to vote on \$7000 school bonds. Address School Board.

Mo., Joplin.—Election to vote on \$350,000 high-school bonds is called for Nov. 16. They will be 10-30-year 4½ per cents. J. A. Becker is Pres't, Board of Education.

Mo., Joplin.—Election will probably be called to vote on bonds in aid of proposed interurban electric railway. Address W. A. Stone, Mayor.

Mo., Kansas City.—\$469,000 4 per cent. and \$16,000 4½ per cent. 20-year school-building bonds have been purchased by the Harris Trust & Savings Bank, Chicago.

Mo., Lexington.—Wellington Special Road Dist., Lafayette county, has voted \$55,000 of bonds to build culverts and bridges. Election will probably be held in Higginsville district to vote on road bonds. Address County Commsr.

Mo., Maryville.—\$35,000 5 per cent. Nodaway county road bonds have been purchased at 5 premium by Gilliam Jackson Loun & Trust Co., Maryville.

Mo., Ozark.—Election to vote on \$50,000 Christian county courthouse bonds is postponed from Oct. 30 to Mch. 4, 1916. Address County Commsr.

Mo., Bevier.—\$12,000 electric light and \$2500 street-improvement bonds are voted. Address The Mayor.

N. C., Carthage.—Bids will be received until Nov. 1 by Road Commsr. Greenwood township, Moore county, U. L. Spence, Secy., for \$10,000 6 per cent. 30-year road-construction bonds.

N. C., Charlotte.—\$17,000 of paving bonds will probably soon be issued. Address The Mayor.

N. C., Clinton.—Bids will be received until noon Nov. 8 by Board of Commsr., Sampson county, J. R. Peterson, Chrmn., for \$25,000 5 per cent. 20-year road bonds. Further particulars will be found in the advertising columns.

N. C., Edenton.—Election is to be held Nov. 3 to vote on \$25,000 bonds Edenton Graded School Dist. J. R. McMullan is Clerk Board of Town Councilmen.

N. C., Goldsboro.—\$90,000 6 per cent. bonds Wayne County Drainage Dist. No. 2 have been purchased at par and accrued interest, less commission of \$7000, by Curtis-Manning Co., El Paso, Tex.

Tex., Robstown.—Bids received 10 A. M. Oct. 27 by Walter F. Timon, Judge Nueces County, for \$158,429 5 per cent. drainage bonds. Award not stated.

Tex., Sherman.—Election is to be called to vote on \$150,000 sewer, street, water and light bonds. Address The Mayor.

Tex., Waco.—\$75,000 sewage-disposal plant, \$15,000 sewer-extension and \$10,000 bridge bonds defeated.

Tex., Wichita Falls.—\$225,000 Wichita County Courthouse bonds to be voted on Nov. 20 are 40-year 5 per cents. Denomination \$1000. Harvey Harris is County Judge.

Va., Lynchburg.—Bids will be received until noon Oct. 30 for \$99,000 4½ per cent. 6-16-year refunding bonds, dated Nov. 1, 1915. Denomination \$9000. Richard Hancock, Chrmn. Finance Com. Common Council.

Va., Newport News.—Steps are being taken to issue \$500,000 of school, street, city hall, sewer, park and public bathing beach bonds. Address The Mayor.

Tex., Victoria.—Bids will be received until 10 A. M. Nov. 6 for \$146,000 5 per cent. 10-37-year \$1000 denomination bonds Drainage Dist. No. 3, Victoria county, dated Jan. 1, 1916. J. P. Pool is Judge Victoria county.

Va., Waverly.—Election is soon to be held to vote on \$55,000 electric-light, water-works and sewerage bonds. Address The Mayor.

W. Va., Ceredo.—Election is to be held Nov. 6 to vote on \$55,000 sewer bonds. Address The Mayor.

W. Va., Grafton.—Bids will be received until 2 P. M. Nov. 15 for \$15,000 5 per cent. 13-30-year \$500 denomination bonds voted last August for purchasing and maintaining city streets. J. M. R. Fortney is City Clerk. Further particulars will be found in the advertising columns.

W. Va., Harrisonville.—Bids will be received until 1 P. M. Nov. 11 for \$30,000 4 per cent. 10-34-year \$100 denomination Clay district school bonds dated June 1, 1914. W. J. Nutter is Pres't, Board of Education.

W. Va., Keyser.—Election is to be held Nov. 2 to vote on \$8000 5½ per cent. fire-truck bonds dated Dec. 1, 1915. W. C. Pifer is Mayor.

W. Va., Pineville.—Bids will be received until 2 P. M. Dec. 1 for \$550,000 5-30-year Wyoming county road-improvement bonds; interest not to exceed 6 per cent. H. M. Cline is Pres't. County Court and Will P. Cook, Clerk. Further particulars will be found in the advertising columns.

Dist. No. 14, \$300 School Dist. No. 15, Titus county bonds.

Tex., Batesville.—\$15,000 bonds Road Precinct No. 1, Zavalla county, are voted. Address County Commsr.

Tex., Edna.—\$105,000 5 per cent. bonds Jackson County Drainage Dist. No. 5, dated Apr. 10, 1915, are being offered. J. W. Bagby is County Judge.

Tex., El Paso.—\$300,000 El Paso county road bonds, recently voted, are reported sold to the Texas Bank & Trust Co., El Paso. Address County Commsr.

Tex., Houston.—Dist. No. 20, Harris county, has petitioned the County Commsr. to call an election to vote on school bonds.

Tex., Hondo.—Bids will be received until 10 A. M. Nov. 8 for \$38,000 5 per cent. 5-40-year bonds Medina County Road Dist. No. 2. Denomination \$500. R. J. Noonan is County Judge. Further particulars will be found in the advertising columns.

Tex., Jefferson.—Bids will be received until 10 A. M. Nov. 8 for \$28,000 5 per cent. 15-30-year \$500 denomination bonds Common School Dist. No. 7, Marion county. Address P. G. Henderson, Judge, Marion county.

Tex., Jourdanton.—\$10,000 Atascosa county funding warrants maturing Apr. 1, 1916, have been purchased by J. L. Arlitt, Austin, Tex.

Tex., Lakeview.—Election will probably be held to vote on \$10,000 school dist. bonds. Address Board of Education.

Tex., Marshall.—Election is to be held Nov. 23 to vote on \$50,000 viaduct bonds. H. O. Wilson is Mayor.

Tex., Oakville.—Election is to be held in Live Oak county Oct. 30 to vote on \$100,000 Precinct No. 1 road bonds. Election will also probably soon be called to vote on road bonds for Precinct No. 2. Address County Commsr.

Tex., Orange.—Commsr. Precinct No. 3, Orange county, has voted \$7000 road bonds. Address County Commsr.

Tex., Pecos.—\$100,000 5 per cent. bonds Improvement Dist. No. 1, Reeves county, have been purchased at par and accrued interest, less commission of \$7000, by Curtis-Manning Co., El Paso, Tex.

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We Finance

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With Records of Established Earnings

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Correspondence Sought

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SPECIAL EXAMINATIONS

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CERTIFIED PUBLIC ACCOUNTANTS

EMPIRE BUILDING ATLANTA, GA.

A staff of thoroughly trained and qualified accountants, whose experience enables them to make a critical analysis of books and accounts.

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School and Drainage

BONDS

FROM MUNICIPALITIES OR CONTRACTORS

We are in position to pay HIGHEST PRICES.

Write or Wire Us Your Offerings

THE NEW FIRST NATIONAL BANK Assets, \$8,000,000 COLUMBUS, O.

BLACK & COMPANY

(WILMER BLACK, C. P. A.)

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All Work under Personal Supervision of Maryland Certified Public Accountant

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Contemplating the Establishment of Industrial Enterprises

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NEWPORT NEWS, VA.

on Hampton Roads, fifteen miles from the sea, deep water, railway and sea transportation facilities unrivaled. Climate salubrious. Apply to

W. B. LIVEZEY, President

OLD DOMINION LAND COMPANY
NEWPORT NEWS, VA.

LOANS MADE TO STATES, CITIES, COUNTIES, ETC.

Also Entire Issues of Bonds Purchased

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MUNICIPAL BONDS

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Resources \$21,000,000

MERCANTILE TRUST AND DEPOSIT COMPANY OF BALTIMORE

A. H. S. POST, President

F. G. BOYCE, Jr., Vice-President

MANUFACTURERS RECORD.

THIRTY-FIRST ANNUAL REPORT
SOUTHERN PACIFIC COMPANY

New York, October 8, 1915.

To the Stockholders of the Southern Pacific Company:

Your Board of Directors submits this report of the operations of the Southern Pacific Company and of its Proprietary Companies for the fiscal year ended June 30, 1915.

PROPERTIES AND MILEAGE.

The transportation lines constituting the Southern Pacific System, June 30, 1915, were as follows:

Divisions.	First Track.	Main Track.	Additional Sidings.	Ferries.	Water Lines.
A.—Mileage of lines belonging to or leased by Companies the capital stocks of which are principally owned by the Southern Pacific Company:					
(1)—Operated by the Southern Pacific Company under leases:					
Central Pacific Ry.....	2,235.68	256.04	870.20	9.90	125
Oregon & California R. R.	692.48	2.85	167.87		
Southern Pacific R. R.	3,497.31	211.76	1,478.49	3.00	
South Pacific Coast Ry.	106.69	20.46	49.58	3.00	
(2)—Operated by the owning Companies:					
Morgan's Louisiana & Texas R. R. & Steamship Co.	404.53	58.35	228.35	3.00	
Louisiana Western R. R.	207.74	....	70.08	....
Texas & New Orleans R. R.	468.14	3.46	202.49	....
Galveston, Harrisburg & San Antonio Ry.	1,351.21	6.59	332.80	....
Houston, East & West Texas Ry.	190.94	....	56.57	....
Houston & Shreveport R. R.	40.72	.69	7.35	....
Houston & Texas Central R. R.	894.63	1.27	258.79	....
Southern Pacific Terminal Company....	....	....	23.64	....
Arizona Eastern R. R.	366.80	....	81.67	....
Corvallis & Eastern R. R.	140.58	....	16.98	....
Southern Pacific Company....	....	....	....	4,683	
B.—Mileage of lines belonging to Companies the capital stocks of which are principally owned by the Morgan's Louisiana & Texas R. R. & S. S. Co., but which are operated by the owning Companies:					
Berlin & Vermillion R. R.	21.44	....	10.99	....
Direct Navigation Co. ....	....	....	....	65	
Total	10,618.89	561.47	3,855.85	18.90	4,873
Less operated jointly by Proprietary Companies	31.49	9.97	17.80	....	....
Total miles of road operated June 30, 1915.	10,587.40	551.50	3,838.05	18.90	4,873
Total miles of road operated June 30, 1914.	10,477.00	506.60	3,788.93	18.90	4,873
Increase.....	110.40	44.90	49.12	....	....

In addition to the mileage above tabulated, the Southern Pacific Company solely controls through ownership of capital stock 890.46 miles of electric lines and 1458.08 miles of steam lines, and jointly controls (through ownership of capital stock in equal proportions with the Atchison, Topeka & Santa Fe Ry. Co.) 400.98 miles of the Northwestern Pacific Railroad and 62.93 miles of the Sunset Railway, an aggregate of 13,399.87 miles.

Since June 30, 1914, railroads have been purchased by Proprietary Companies as follows:

HOUSTON & TEXAS CENTRAL RAILROAD.

Under authority of Chapter 40, Laws of the State of Texas, 1913, the Houston & Texas Central Railroad Company purchased as of July 1, 1914, the railroad and appurtenances of the Hearne & Brazos Valley Railroad Company, extending from Hearne to Stone City, Texas, a distance of 18.61 miles.

TEXAS & NEW ORLEANS RAILROAD.

Under authority of Chapter 54, Laws of the State of Texas, 1913, the Texas & New Orleans Railroad Company purchased as of July 1, 1914, the railroad and appurtenances of the Burr's Ferry, Brownell & Chester Railway Company, extending from Rockland to Turpentine, Texas, a distance of 11.89 miles.

INCOME FOR THE YEAR.

The income for the year ended June 30, 1915, of the Southern Pacific Company and of its Proprietary Companies, combined, excluding offsetting accounts, compared with last year, is as follows:

	This year.	Last year.	+ Increase. - Decrease.	Per Cent.
Average miles of road operated:				
Lines East of El Paso.....	3,534.12	3,459.16	+74.96	2.17
Lines West of El Paso.....	7,020.12	6,962.49	+57.63	.83
	10,554.24	10,421.65	+132.59	1.27
<i>Operating Income.</i>				
Railway operating revenues.....	\$129,865,675.09	\$138,520,258.56	-\$8,654,583.47	6.25
Railway operating expenses.....	87,753,824.31	93,662,266.93	-5,908,424.62	6.31
	\$42,111,832.78	\$44,857,991.63	-\$2,746,158.85	6.12
Net revenue from railway operations.	\$6,371,272.84	\$7,162,624.57	-\$791,351.73	11.05
Uncollectible railway revenues.....	50,946.14	....	+50,946.14	....
	\$35,689,613.80	\$37,695,367.06	-\$2,005,753.26	5.32
<i>Non-operating Income.</i>				
Rent from locomotives.....	372,612.74	\$239,269.60	+\$166,656.86	69.65
Rent from passenger-train cars.....	282,448.41	212,944.78	+\$69,503.63	32.64
Rent from floating equipment.....	80,759.03	2,609.58	+\$78,149.45	22.22
Rent from work equipment.....	69,555.19	188,542.24	-118,987.05	63.11
Joint facility rent income.....	473,475.01	472,424.65	+1,050.36	.22
Income from lease of road.....	94,996.46	94,667.66	+328.80	.35
Miscellaneous rent income.....	444,514.74	366,230.03	+\$8,284.71	21.88
Miscellaneous non-operating physical property.....	298,358.19	225,476.78	+72,881.41	32.32
Dividend income.....	4,478,250.00	3,656,276.04	+821,973.96	22.48
Income from funded securities—Proprietary Companies.....	3,833,185.82	3,612,450.71	+220,735.11	6.11
Income from funded securities—Affiliated and other companies.....	3,756,061.84	3,813,144.31	-57,082.47	1.50
Income from unfunded securities and accounts.....	2,651,463.91	2,334,382.60	+317,081.31	13.58
Income from sinking and other reserve funds.....	678,550.66	556,873.33	+121,677.33	21.85
Miscellaneous income.....	577,332.14	100,617.42	+467,714.72	426.68
	\$17,791,564.14	\$15,884,909.73	+\$1,906,654.41	12.00
Gross income.....	\$53,481,177.94	\$53,580,276.79	-\$99,098.85	.18
<i>Deductions from Gross Income.</i>				
Hire of freight cars—Debit balance.....	\$120,850.99	\$177,822.48	-\$56,971.49	32.04
Rent for locomotives.....	24,771.52	30,803.31	-6,031.79	19.58
Rent for passenger-train cars.....	172,921.37	156,112.16	+16,809.21	10.77
Rent for floating equipment.....	3,613.92	2,750.90	+\$863.92	31.42
Rent for work equipment.....	6,966.69	9,397.65	-2,433.96	25.93
Joint facility rents.....	358,839.75	297,571.04	+61,288.71	20.59
Rent for leased roads.....	717,904.21	707,437.62	+10,466.59	1.48
Miscellaneous rents.....	647,940.60	612,206.59	+35,731.01	5.84
Miscellaneous tax accruals.....	965,387.10	609,457.87	+355,929.23	58.40
Interest on funded debt.....	28,339,034.71	27,415,733.89	+1,523,300.82	5.66
Interest on unfunded debt.....	356,574.07	546,242.06	-\$189,667.99	34.72
Amortization of discount on funded debt.....	237,540.56	505,476.92	-267,936.36	53.00
Maintenance of investment organization.....	125,981.31	159,056.90	-33,075.59	20.79
Miscellaneous income charges.....	223,537.67	1,092,267.48	-\$859,749.81	78.71
Total deductions from gross income....	\$32,910,858.47	\$32,322,358.97	+\$588,499.50	1.82
Net income.....	\$20,570,319.47	\$21,257,917.82	-\$687,598.35	3.23
<i>Disposition of Net Income.</i>				
Income applied to sinking and other reserve funds.....	\$20,724.57	\$805,702.07	+\$134,022.50	16.63
Income balance transferred to credit of Profit and Loss.....	\$19,630,594.90	\$20,452,215.75	-\$821,620.85	4.02
Per cent. on outstanding capital stock of Southern Pacific Company.....	7.20	7.50	-.30	4.02

In the foregoing table the income has been classified in accordance with the regulations of the Interstate Commerce Commission, effective July 1, 1914. This change in the classification has necessitated a restatement of the figures for last year.

The details of Railway Operating Revenues and Railway Operating Expenses are fully dealt with under Transportation Operations.

The \$50,946.14 reported against Uncollectible Railway Revenues represents the amount of charges against companies and individuals, for transportation services rendered, which have been determined to be uncollectible, and which are debited to said account in accordance with regulations of the Interstate Commerce Commission, effective July 1, 1914. Similar charges in previous years were debited to Railway Operating Revenues.

The income for the year from rent of equipment exceeds the payments to other companies for rent of equipment by \$176,256.88. This is a decrease, as compared with last year, of \$90,223.72.

The principal item of increase in Miscellaneous Rent Income is the rental received from the City of Portland for the use of the Willamette River bridge, a one-half interest in which was acquired during the year.

The \$317,081.31 increase in Income from Unfunded Securities and Accounts, \$177,028.00 represents interest on increased investment advances to Affiliated Companies, and the remaining \$139,359.29 represents increased interest received on bank deposits, etc.

The increase of \$467,514.72 in Miscellaneous Income is the result, principally, of taking into the year's income the net receipts from the operations of the steamships Persia and Nile from July 1, 1913, to June 30, 1915; and of crediting to income, in accordance with the regulations of the Interstate Commerce Commission, interest on the Company's own funds used for construction.

The increase in Miscellaneous Tax Accruals is the result, principally, of including in this account this year, in accordance with the regulations of the Interstate Commerce Commission, effective July 1, 1914, certain taxes which were included in Railway Tax Accruals last year.

The increase in Interest on Funded Debt is the result, principally, of the excess of interest accruing this year on the Five Per Cent. Twenty-Year Convertible Bonds issued in June of last year over the interest accruing last year on the One-Year Five Per Cent Secured Gold Notes retired in June of last year.

The decrease in the charge for Amortization of Discount on Funded Debt is the result, principally, of charging against last year's income the remainder of the discount on the \$26,000.00 of Southern Pacific Company One-Year Five Per Cent. Notes retired in June of last year.

The amounts reported against Maintenance of Investment Organization represent expenses of the Southern Pacific Company for other than railway operations, and the expenses of keeping up the corporate organizations of the Proprietary Companies, the properties of which are operated by the Southern Pacific Company under leases.

The decrease in Miscellaneous Income Charges is due to the fact that last year the charge for depreciation on rolling stock owned by the Southern Pacific Company and leased to other companies was included in this account; while this year the corresponding charge is included in operating expenses, in accordance with the regulations of the Interstate Commerce Commission.

On June 30, 1915, the principal of advances to the Southern Pacific Railroad Company of Mexico amounted to \$38,593,894.69. Interest accruing on these advances has not been taken into the income of the Southern Pacific Company.

CAPITAL STOCK.

The capital stock of the Southern Pacific Company outstanding at the beginning of the year amounted to..... \$272,674,466.

Common stock issued in exchange for a like amount of Five Per Cent. Twenty-Year Convertible Gold Bonds surrendered and cancelled..... 2,000.

Amount of Southern Pacific Company stock outstanding June 30, 1915..... \$272,674,466.

There was no change during the year in the capital stocks of the Proprietary Companies. The amount outstanding June 30, 1915, was as follows:

Common stock..... \$315,800,572.00
Preferred stock..... 20,000,000.00

Amount of Southern Pacific Company stock outstanding June 30, 1915..... \$345,200,572.

Stocks of Proprietary Companies outstanding June 30, 1915, were held as follows:

Owned by Southern Pacific Company..... \$344,567,400.00
Owned by Morgan's Louisiana & Texas R. R. & S. S. Co..... 350,000.00
In the hands of the public..... 83,172.00

Total..... \$345,200,572.

ASSETS AND LIABILITIES.

The value of the granted lands belonging to the Central Pacific Railway Company and to the Oregon & California Railroad Company remaining unsold at the close of the year is not included in the statement of the assets of the said companies.

The assets and liabilities of the Southern Pacific Company and of its Proprietary Companies, combined, on June 30, 1915, and the increases and decreases during the year, excluding the offsetting accounts between the Companies summarized, were as follows:

Total..... Investments..... June 30, 1915. Increase. Decrease.

Investment in road and equipment..... \$908,712,243.46 \$6,080,284.18 \$26,255.5

Deposits in lieu of mortgaged property sold..... 11,961,803.55

Improvements on leased railway property..... 15,997,692.60 303.36

Miscellaneous physical property..... 1,425,925.63 1,069,081.55

Investments in affiliated companies:

Stocks and bonds..... \$140,739,758.47 14,908,811.86

Notes and advances..... 111,175,191.32 5,650,500.99

Other investments:

Stocks and bonds..... 7,907,307.30

Notes, advances and miscellaneous..... 6,838,556.05 164,805.79

Total..... \$452,210.21

ASSETS AND DEFERRED ASSETS.

Cash and demand loans and deposits..... \$16,307,928.64 \$2,862,656.15

Special deposits..... 541,169.50 \$453,883.10

Other cash accounts..... 10,829,629.23 4,262,669.9

Material and supplies..... 18,859,879.40 177,192.91

Deferred assets..... 6,211,521.00 200,459.37

Total..... \$52,750,127.77 \$6,293,587.5

UNADJUSTED DEBITS.

Discount on capital stock..... \$3,678,600.00

Discount on funded debt..... 4,223,011.38

Other unadjusted debits..... 4,560,807.66 \$654,308.68

Total..... \$12,452,419.04 \$209,169.28

Total assets..... \$1,561,134,747.79 \$21,435,518.45

Capital stock of Southern Pacific Company..... \$272,674,405.64 \$2,000.00

Capital stock of Proprietary Companies..... *\$345,200,572.00

MANUFACTURERS RECORD.

65

total of \$426,128,249.50, which securities are owned by the Southern Pacific Company or by Proprietary Companies, or are held in sinking funds of Proprietary Companies. The cost of these securities is included in the investments shown above. Of the said amount, stocks of the par value of \$249,653,161, which stand charged on the books at \$222,932,667.41, are pledged against the issue of Southern Pacific Company stock and bonds.

TRANSPORTATION OPERATIONS.

The results of the year's transportation operations compared with those of last year are as follows:

verage miles of road operated.....	This year. 10,554.24	Last year. 10,421.65	Increase. 132.59	Decrease.	Per cent. 1.27
<i>Railway Operating Revenues.</i>					
Freight.....	\$80,020,751.28	\$85,864,378.75	.....	\$5,843,627.37	6.81
Passenger.....	36,864,997.50	40,414,932.05	.....	3,549,934.55	8.78
All and Express.....	5,922,171.25	5,297,092.03	\$175,079.22	.....	12.73
All other transportation.....	3,065,134.36	2,743,789.82	311,353.54	.....	11.35
Accidental.....	3,941,310.42	4,190,613.25	.....	248,703.83	5.93
Joint facility—Credit.....	76,942.58	134,213.84	.....	57,271.26	42.67
Joint facility—Debit.....	16,212.40	34,732.18	18,519.78	.....	53.29
Total.....	\$129,865,678.09	\$138,520,258.56	.....	\$8,654,583.47	6.25
<i>Railway Operating Expenses.</i>					
Maintenance of way and structures.....	\$15,356,335.77	\$16,515,452.13	.....	\$1,159,096.36	7.02
Maintenance of equipment.....	19,815,972.36	21,475,526.20	.....	1,659,552.84	7.73
Traffic.....	2,915,009.84	3,114,348.10	.....	199,338.26	6.46
Transportation.....	44,006,753.11	46,400,045.47	.....	2,393,292.36	5.16
Miscellaneous operations.....	2,031,856.61	2,292,153.36	.....	260,298.75	11.36
General.....	3,955,027.24	3,884,741.67	.....	70,285.57	2.34
Transportation for investment—Credit.....	327,133.62	.....	.....	327,133.62	.....
Total.....	\$87,753,842.31	\$93,662,266.93	.....	\$5,908,424.62	6.31
Revenue from railway operations.....	\$42,111,832.78	\$44,857,991.63	.....	\$2,746,158.85	6.12
Railway tax accruals.....	\$6,371,272.84	\$7,162,624.57	.....	\$791,351.73	11.05
Uncollectible railway revenues.....	50,946.14	.....	.....	50,946.14	.....
Total operating income.....	\$35,689,613.80	\$37,695,367.06	.....	\$2,006,753.26	5.32

Freight Traffic.					
Average revenue freight—total.....	31,857,039	32,599,138	.....	742,099	2.28
Average revenue freight—total.....	6,637,345.25	7,108,331.050	.....	470,985.755	6.63
Average ton miles per train mile—					
All freight.....	390.24	399.43	.....	9.19	2.30
East of El Paso.....	507.34	510.30	.....	2.46	.48
West of El Paso.....	465.71	471.21	.....	7.50	1.59
All lines.....					
Average loaded freight car miles per train mile:					
East of El Paso.....	18.43	18.95	.....	.32	.24
West of El Paso.....	24.66	24.10	.56	.....	.23
All lines.....	22.32	22.28	.04	.....	.18
Average ton miles per loaded freight car miles—all freight:					
East of El Paso.....	21.18	21.08	.10	.....	.47
West of El Paso.....	30.69	21.18	.....	.58	.24
All lines.....	30.78	21.15	.....	.37	.17
Percentage of loaded freight car miles to total:					
East of El Paso.....	69.22	70.91	.....	1.69	2.38
West of El Paso.....	70.13	70.25	.....	.12	.17
All lines.....	69.34	70.45	.....	.61	.57
Average freight revenue per train mile.....	\$4.39	\$4.44	.....	\$0.05	1.13
Average revenue per ton mile of freight—revenue freight.....					
Average miles hauled — revenue freight.....					
Passenger Traffic.					
Passengers carried—revenue—including ferry suburban.....					
Passenger miles — revenue—including ferry suburban.....					
Passenger service train revenue per train mile.....					
Passenger revenue per passenger					
Passenger miles carried—revenue passengers—including ferry suburban.....					
*Figures in last year's report were based on commercial freight only.					
**Similar charges in previous years were debited to Railway Operating Revenues.					

TRANSPORTATION OPERATIONS—CONTINUED.

Since the opening of the Panama Canal, August 13, 1914, competition has been intensified and the gross revenue of the lines of this Company has been considerably reduced by a large increase in the number, capacity, and sailings of steamships between Atlantic and Pacific ports, which, by a material reduction of rates, have taken a substantial volume of freight that was formerly shipped over transcontinental railroads.

The business depression prevailing throughout the United States was aggravated on our lines by the outbreak of the European War. Some of the copper mines served by them were closed down and others were operated to about half normal capacity, which reduction of fuel consumed in their operation. The construction of new buildings was retarded and railroad construction and development almost entirely abandoned, these conditions causing a material decrease in revenue derived from lumber and other construction material. There was, moreover, a widely distributed decrease of earnings upon general merchandise and miscellaneous traffic.

These unfavorable conditions, and consequent general retrenchment in expenditures, have also affected both business and pleasure travel and have brought about a large reduction in passenger and related earnings, the former amounting to 41 per cent. of the total reduction of \$8,654,583.47 in operating revenues. This reduction has been increased by serious inroads made upon local railroad travel by automobile competition, which the improvement of highways has encouraged and rapidly developed.

While these losses were offset to some extent by Exposition travel, the increased earnings derived from that source before the close of the year were not sufficient to affect materially the general results. Earnings from express business increased under a new and more favorable contract with the Express Company.

The net decrease in operating revenues of the Company was equivalent to 6.25 per cent., which is less than the average percentage of reduction in earnings of large railroad systems reporting to the Interstate Commerce Commission.

A readjustment of rates is now being made which is expected to check the diversion of traffic to the Canal steamship lines; a normal condition of the mining industry has been restored; and, as has been previously stated, passenger earnings since the beginning of the new fiscal year have been substantially increased by Exposition travel. The prospect of better earnings during the coming fiscal year is encouraging, but the extent and permanence of the improvement will depend upon the return of general confidence in the business world, the destruction of which, without doubt, has been the most potent influence that has held back a revival of business and investment in new enterprises.

Although railway operating revenues decreased \$8,654,583.47, or 6.25 per cent., total operating income decreased only \$2,006,753.26, or 5.32 per cent., owing to a decrease of \$5,908,424.62 in operating expenses, and \$791,351.73 in railway tax accruals. This reduction was effected in face of an increase of \$765,082.34, in price of locomotive fuel; of an increase of \$37,388.00 through higher wages schedules; of an increase of \$75,589.50 in valuation expenses; and of an increase of \$1,240,290.62 in charges to operating expenses for equipment depreciation and retirements, caused by including in this year's expenses \$1,190,422 to comply with Interstate Commerce Commission's classification, by which we were required to charge to operating expenses the depreciation portion of rental paid on equipment, which last year was charged to income account. But for these abnormal and uncontrollable charges total operating income would have shown an increase despite the large decrease in operating revenues.

These favorable results, attained under the most trying conditions as to new and intense competition, higher wages and fuel costs, increases in expenses due to costs of valuation, and increases in other operating expense items caused by compliance with new laws and rules of regulating bodies, in face of a decrease in volume of 6.63 per cent. in freight and 4.94 per cent. in passenger traffic caused by business depression, reflect great credit on your officers. For instance: Marked improvement was effected during the year in the use of locomotive fuel, each pound of which moved in freight service 6.83 per cent. and in passenger service 2.85 per cent. more gross ton miles than in the previous year. The saving thereby effected amounted to \$450,388 as compared with last year, and \$1,158,015 as compared with two years ago.

As shown by chart, page 19 (pamphlet report), continued efforts were made to secure safer operation, as a result of which the number of fatalities and injuries was reduced and the payments on account of casualties and damages of all kinds were \$23,758.74 less than last year.

GOVERNMENT ATTACK ON RIGHT TO CONTROL CENTRAL PACIFIC RAILWAY.

In February, 1914, the United States, acting through the Attorney-General, brought suit in the United States District Court for the District of Utah, against the Southern Pacific Company and the Central Pacific Railway Company, to separate the two companies, on the ground that their union in one system was in violation of the Federal Anti-Trust Act of 1890, known as the Sherman law, and also in violation of the Pacific Railroad Acts, meaning the acts of Congress providing for the construction of the Union Pacific and Central Pacific Railroads. Since the last annual report, in which the nature of this litigation was explained, the testimony on both sides has been taken and the case has been fixed for argument in the lower court on December 1, 1915. It may be assumed that an appeal to the Supreme Court of the United States will be taken by the losing party. As the case will be submitted to the court for decision at any early date, it will serve no useful purpose to attempt now to predict the outcome.

GOVERNMENT ATTACK ON TITLE TO OIL LANDS.

The last report contained the following statement:

"It follows, as a result of the decision in the Burke case, that proven fraud alone can avail to defeat our title to our oil lands. We know there was no fraud in obtaining the patents, and we may consider that the danger of losing the lands is now removed. Moreover, except as to a comparatively small quantity of land, in respect to which suits have already been instituted, the six years period of limitation is believed to be a bar even to a suit alleging fraud."

The Attorney-General of the United States, deeming it his duty not to abandon the pursuit of the Company's lands without a judicial investigation to determine whether or not our patents were fraudulently obtained, has renewed the litigation, specially alleging such fraud; and, in order to avoid the six years period of limitation, it has been further alleged that the Government was prevented from suing within the required time, by fraudulent concealment of its acts by the Railroad Company. There has been no final decision in these suits. The fact that they have been instituted does not lessen the confidence expressed in the last annual report as to our ability to sustain our title to the lands in question.

GOVERNMENT ATTACK ON THE TITLE TO THE OREGON AND CALIFORNIA RAILROAD'S LAND GRANT.

In 1906 the United States brought suit against the Oregon and California Railroad Company and the Southern Pacific Company, to forfeit to the Government the unsold portion of the lands granted by act of Congress to aid in the construction of the Oregon and California Railroad. The ground of forfeiture mainly relied on was that some of the lands included in the grant had been sold in disregard of the requirements of the grant act, namely, that the lands should be sold to actual settlers only, for not more than \$2.50 per acre, and in quantities not exceeding 160 acres. The quantity of land involved amounted to about 2,300,000 acres.

The lower court decided in favor of the Government, but in June of this year the Supreme Court reversed the decision of the court below, and declared that the title of the Railroad Company to the unsold lands had not been forfeited and was unimpaired by the alleged grounds of forfeiture. The Supreme Court further decided that the lands were held subject to the original terms of the grant limiting sales to actual settlers, in quantities not exceeding 160 acres to any one purchaser and at prices not exceeding \$2.50 per acre. Recognizing that such restrictive covenants were not appropriate to lands of the character of those remaining unsold, the Court practically referred the matter to Congress, by enjoining any disposition of the unsold lands or of the timber thereon "until Congress shall have a reasonable opportunity to provide by legislation for their disposition in accordance with such policy as it may deem fitting under the circumstances* and at the same time secure to the defendants all the value the granting acts conferred upon the railroads," with the proviso that, if Congress does not act within six months, the Railroad Company may apply to the lower court for a modification of so much of the injunction as enjoined any disposition of the land or timber. In other words, if Congress does not act within the time named, the lower court should grant relief from the broad injunction against any sale of the lands, and should confine the injunction to sales in violation of the terms of the grant. It will be observed that any legislation which Congress may provide is subject to the condition that it must secure to the railroad all the value the granting acts conferred.

It would not be profitable or expedient at this time to speculate upon the possible action of Congress. The Railroad Company will be prepared to co-operate with Congress in securing appropriate modification of the original restrictions upon the sales of lands, BUT IT WILL INSIST UPON OBSERVANCE OF THE CONDITION THAT THE FULL VALUE CONFERRED BY THE GRANTING ACTS IS SECURED TO IT.

*The italics are ours.

FEDERAL LEGISLATION FORCING PACIFIC MAIL STEAMSHIP COMPANY OUT OF BUSINESS.

The Southern Pacific Company owns 55.40 per cent. of the capital stock of the Pacific Mail, an American steamship company, that has been operating lines of steamships on the Pacific Ocean for the last 67 years.

The Act of Congress approved March 4, 1915, generally known as the La Follette Act, becomes effective, as to vessels of the United States, November 4, 1915. The Company cannot continue operations under the terms of that Act without incurring heavy losses. Figures prepared by chartered accountants show that the Act would increase the expenses of its transpacific fleet as to wages and feeding crews, alone, by \$640,905 per annum. Other provisions of the Act, relating to lifeboat crews and to the Central America line, would swell this amount. The abnormally large surplus in 1915, due to higher rates following the withdrawal of Canadian Pacific and Japanese steamers, in consequence of the European war, would not suffice to meet the increases in wages and feeding expenses only that the Act will demand. The stockholders of the Pacific Mail Steamship Company realized that the Company could not obey this oppressive law and exist, and, therefore, have authorized the sale of their vessels as a necessary condition precedent to the liquidation of the Company.

GENERAL.

Dividends on the capital stock of your Company were declared during the year, payable as follows:

1½ per cent, payable January 2, 1915.	\$4,000,116.08
1½ per cent, payable April 1, 1915.	4,000,116.08
1½ per cent, payable July 1, 1915.	4,000,116.08
1½ per cent, payable October 1, 1915.	4,000,116.08

Total..... \$16,390,464.32

The revolutionary disturbances on the line of the Southern Pacific Railroad Company of Mexico have continued. It is estimated that from the beginning of the Madero Revolution, in 1910, to June 30, 1915, the cost of property destroyed will approximate 3,724,000 pesos, equivalent to \$1,562,000. On account of these losses the Company filed claims with the Madero Government amounting to 287,853 pesos, all of which were approved but have not been paid. No further claims for property losses have been filed owing to the lack of a constitutional central government to which they could be presented. In addition to the above the Company has claims for freight and passenger service performed, for rental of road and equipment, and for material furnished to or confiscated by the various military authorities, amounting to 5,088,000 pesos. Bills for this amount (less 434,000 pesos received on account) will be filed with the proper authorities as soon as conditions permit. During the year only such maintenance work has been done as was absolutely necessary to render it possible to operate trains over those portions of the line which are open for traffic. The revenues during the year, including those derived from the transportation of troops and munitions of war, were slightly in excess of the expenditures for maintenance and operation.

In addition to the losses during the year from revolutionary causes, the Company suffered heavily from an unprecedented flood along the line in Sonora.

The continued revolutionary disturbances preclude any thought of completing, at the present time, the 99.47 miles of line from Tepic to La Quemada referred to in last year's report.

In addition to the completed lines of railway reported under Properties and Mileage, and the railway of the Southern Pacific Railroad Company of Mexico, hereinbefore mentioned, construction is progressing on the lines of the following companies, viz.:

	Length of Projected line.	Track Completed.	Grading Completed.	Grading Progressing.
	Miles.	Miles.	Miles.	Miles.
Central Pacific Railway:				
Colfax to Blue Canon, Cal.—second track:				
Length of projected line.....	25.08			
Line placed in operation.....	23.05			
Colusa & Hamilton Railroad:				
Hamilton to Harrington, Cal.....	61.15			
Willamette Pacific Railroad:				
Eugene to Marshfield, Oregon.....	121.50			
Texas & New Orleans Railroad:				
Turpentine to Brownell, Tex.....	17.63			
Length of projected line.....	9.13			
Length of track completed.....		1.99		.04
Length of grading completed.....				...
Length of grading progressing.....				

The Board announces with sorrow the death, on May 19, 1915, of General Thomas H. Hubbard, a Director, and, on November 14, 1914, of Mr. H. A. Jones, Assistant Treasurer, of your Company. General Hubbard served as a Director and as Vice-President for many years prior to 1911, and was again elected a member of the Board shortly before his death. Mr. Jones was in the service from 1885 to the time of his death, serving as General Freight Agent, Freight Traffic Manager, and Assistant Treasurer.

Under the pension system put into effect on January 1, 1903, seven hundred and forty-six employees are carried on the pension rolls of the rail and water lines. The payments to them for the year amounted to \$326,885.04.

By order of the Board of Directors,

JULIUS KRUTTSCHNITT,
Chairman of the Executive Committee.

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References—The Leading Cities of the South

THE J. B. McCRARY COMPANY
Engineers ATLANTA, GEORGIA
MUNICIPAL IMPROVEMENTS

Southern work only. Have built over half of the Water, Light and Sewer Systems in Georgia and Alabama. We Design — Finance — Superintend. Bonds Purchased.

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Steel Works, Rolling Mills, Blast Furnaces, Hot Blast Stoves, Furnaces for all Purposes. Operated with Producer Gas, Natural Gas, Oil or Pulverized Coal. Coke Ovens. Gas Producers, Hand Operated or Mechanical.

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Insulating for Steam-Water Refrigeration. Saving of Heat Units.
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CONVERSE COLLEGE

SPARTANBURG, S. C.

is one of the only six women's colleges in the South honored by membership as a standard college in "The Association of Colleges and Preparatory Schools of the Southern States." Its B. A. degree is accepted by the highest grade Colleges and Universities and admits, without further work, to candidacy for the M. A. degree. It has separate science, music, and library buildings; dormitories limited to 190; gymnasium and infirmary; 42-acre campus; and 38 teachers and officers. It is thirty-five miles from the Blue Ridge mountains, and has an ideal winter climate. It owes no debts, and has an endowment. It is accessible North, East, South, and West by six lines of railway. If you wish a catalogue, address

ROB'T P. PELL, Litt. D., President Spartanburg, S. C.

[Continued from Page 62.]

est test of its efficiency under exacting conditions probably being in the matter of aluminum castings.

Directory of American Manufacturers.

Thomas' official register of American manufacturers, covering, it is claimed, every existing trade, has now been issued for 1915 by the Thomas Publishing Co. of New York. Seventy thousand articles are specified and indexed to enable the user to secure the names of the manufacturers, first hands, and other sources of supply in any line of trade, in addition to the "A-Z" alphabetical list of manufacturers, showing the capital rating of each firm. The register has been endorsed by practically all the boards of trade and chambers of commerce of the United States, and is said to be the largest and most widely-used classified reference book of its character ever issued. The book is cloth bound, contains 3100 pages and sells for \$15.

Luten Design Concrete Bridges.

Eighteen construction views showing the more important reinforced concrete bridges of Luten design under erection during the past summer in different parts of the country constitute the essential features of a pamphlet issued by Daniel B. Luten, designing and consulting engineer, Indianapolis, Ind. The frontispiece is a view of the highway bridge of Luten design recently finished across the Wabash River on Cicott St., Logansport, Ind. The bridge, which is claimed to represent the ideal highway bridge of the present day, has six spans of 96 to 108 feet each, a total length of 650 feet, and wide enough to accommodate a 35-foot roadway. Other bridges illustrated in the pamphlet show them in various stages of construction and after completion.

Borge Incinerator Installations.

Standard and special incinerators as built and installed by the Borge Incinerator Corporation, Flatiron Bldg., New York, for municipalities, institutions, banks, hotels, factories, department stores, clubs and private residences are illustrated and described in a pamphlet entitled "Destructors That Destroy." The field of operations of the company embrace planning, designing, estimating and supervision of installations, as well as contracting and acting in an advisory capacity as to method and ways and means for destruction of all kinds of wet or dry waste. The pamphlet contains views of installations made by the company, which include those of a private destructor for Mrs. W. K. Vanderbilt's kitchen; Henry Phipps Institute, Philadelphia; Harper Hospital, Detroit, Mich.; Baltimore Country Club; Blackstone Hotel, Chicago, and municipal incinerator plants for the City of Muskogee, Okla.; City of Racine, Wis., and others.

Drainage.

C. G. Elliott, consulting drainage engineer of Washington, D. C., has had printed in pamphlet form the paper on "Drainage as a Correlative of Irrigation," which he presented at a session of the International Engineering Congress held in San Francisco September last. Mr. Elliott draws special attention to the dangers of overirrigation. He states that so salutary and beneficial is the effect of water upon dry land that the necessity for its regulation and control after it has been collected and distributed upon the land by works or irrigation is not realized until the swamping of hard-earned fields warns the owner that the value of his lands is disappearing before the insidious march of seep water and alkali. Other literature dealing with drainage engineering has been contributed by Mr. Elliott, among which are two books, one on "Practical Farm Drainage," a manual for the farmer and student, and "Engineering for Land Drainage," which is a manual for the reclamation of lands injured by water. These books were published by John Wiley & Sons, Inc., 432 Fourth Ave., New York, and sell for \$1.40 and \$1.80, respectively.

Leather Belting.

All the successful brands of pure oak-tanned leather belting and lace leather manufactured by Charles A. Schieren & Co., 45-51 Ferry street, New York, are illustrated and described in a catalogue now being distributed by the company. In addition to the different brands of leather belting produced, the catalogue describes the construction features, giving a general idea of the goods manufactured, and contains directions for making link belts endless, rules for calculating length of belting before pulleys are placed in position, rules for ascertaining diameters of pulleys and speeds of shafts

and tables showing horse-power transmitted by leather belts of various widths. Belting accessories described in the catalogue and manufactured by Charles A. Schieren & Co. include raw hide and tanned lace leather, belt lacing, Schieren's belt oil, Schieren's belt dressing, Schieren's belt cement, ring sets, cement pots and brushes, belt hooks and eyes, Schieren's belt clamps and rods, friction leathers, gaskets or ring packings, hydraulic or disc packings, etc. Harwell R. Hall, 122 Shore street, Petersburg, Va., is the Southern sales agent for the company.

Mechanical Rubber Goods.

Catalogue No. 25, entitled "Rubber Goods for Mechanical Purposes," has been issued by the New Jersey Car Spring & Rubber Co., of Jersey City, N. J., one of the oldest manufacturers of rubber goods for mechanical purposes. In this catalogue is illustrated and described a wide variety of its rubber products, including "Arcadia," "Extra Pan," "Gladiator," "Eagle" and other brands of belting for transmission, conveying and elevating purposes; water, gasoline, steam, chemical and air hose, both smooth and wrapped; nozzles and flexible play pipes for fire hose; hose clamps; swinging racks and reels; rubber tubing; wire and cloth insertion-sheet packing; round and square plain packing; plain, mixed and pure rubber gaskets; composition rubber valves; rubber diaphragms; rubber-covered rolls for paper mills; bleachers, dye houses, textile mills, leather manufacturers, etc.; window strips; automobile tires and tubes; perforated and corrugated rubber matting, etc. General hints on the use of rubber belting illustrating the proper tension to be used methods of splicing rubber belts, and other information and belting rules are also given in the catalogue.

Alberger Pumps and Steam Turbines.

Design and construction of Alberger centrifugal boiler-feed pumps, Alberger turbine centrifugal pumps and Alberger-Curtis steam turbines are illustrated and described in Bulletin No. 21, recently issued by the Alberger Pump & Condenser Co., 140 Cedar street, New York. Types S and V pumps are shown direct connected both to steam turbines and electric motors. The Alberger-Curtis turbine is built under a license granted by the General Electric Co. of Schenectady, N. Y., which permits the Alberger Pump & Condenser Co. full use of all Curtis patents for steam turbines used for driving centrifugal pumps. The selection of centrifugal boiler-feed pumps, with charts showing the relationship between boiler horse-power and pump capacity in gallons per minute, and relationship of water temperature, effective head in feet at center line of pumps and per cent. of maximum capacity for Alberger turbine pumps; the effect of hot water on pump capacity; the regulation of centrifugal boiler-feed pumps; centrifugal boiler-feed pumps for marine service, with diagram showing suggested arrangement of Alberger centrifugal boiler-feed pumps for use on shipboard, and information required for making estimates to install pumping equipment, together with tables of dimensions of Alberger pumps, are among the subjects discussed in the bulletin.

Effects of Temperature Upon Concrete.

For the purpose of furnishing some information concerning the influence of temperature on the attainment of strength in concrete the Engineering Experiment Station of the University of Illinois has issued as Bulletin No. 81 a booklet by A. B. McDaniel, which presents a study of the data obtained from three series of tests of concrete cubes and cylinders. These specimens were stored under temperature conditions varying from 25 to 90 degrees Fahrenheit, and were tested at various ages up to 28 days. Curves are presented to show the relation between strength and age for different temperature conditions, and also the relation between strength and temperature at different ages. The results are summarized in a set of curves which show the percentage strength of concrete at different ages and under different temperature conditions to that at an age of 28 days and under a normal temperature of 70 degrees Fahrenheit. The bulletin will be of value to the contractor, engineer and others engaged or interested in construction work for information regarding the strength which may be expected of ordinary concrete under different age and temperature conditions and the time for the removal of the forms. Copies of Bulletin No. 81 may be obtained gratis upon application to W. F. M. Goss, director of the Engineering Experiment Station, University of Illinois, Urbana, Ill.

Illustrating to de
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MECHANICAL

Illustrations and descriptions having news value pertaining to developments in machinery, mechanical devices and inventions will be considered for use in this department.

Modern Refrigerating Machinery in the Poultry-Packing Industry.

The South should take heed of the success achieved by the poultry-producing sections of the West in their many poultry-packing plants for dry freezing and chill-



TRIUMPH AMMONIA COMPRESSORS, ETC., IN THE ENGINE-ROOM OF THE STORER BROS. CO.'S POULTRY-PACKING PLANT.

ing fowl for shipment to the great markets of the North and East. While this industry is comparatively new, many plants of this type have been constructed and artificial refrigeration has aided in turning losses into tangible assets for those engaged in the poultry-packing business.

Modern refrigerating equipment for this type of central poultry-packing house is illustrated in the combination 30-ton refrigerating and ice-making plant furnished by the Triumph Ice Machine Co. of Cincinnati, O., for the new three-story concrete and hollow tile constructed building of the Storer Bros. Company at Ada, O. Nine cold-storage rooms with temperature ranging from 32 degrees Fahrenheit to zero provide 25,000 cubic feet of space. Located on the first floor is the engine-room, containing the ammonia compressors, etc., and the freezing tank, which has a daily capacity of 10 tons of distilled water ice. On the second floor is the butter-room, having a temperature of 10 degrees Fahrenheit; the pre-cooling storage-rooms for eggs and poultry, with a temperature of 32 degrees, and two poultry-chilling rooms. The third floor is utilized as a poultry-fattening room, which is said to accommodate 5000 fowls at one time.

Facilities for refrigeration and ice-making are supplied by one 10x18-inch double-acting Triumph compressor, driven by a 12x30-inch Corliss engine, and four sections of atmospheric ammonia condenser, each section 10 pipes high. Capacity of the ice-making tank, which is equipped with a 20-ton Triumph shell-type brine cooler, is 132,300 pound cans. Circulation of the brine is obtained by a 12-inch vertical agitator driven by a 3½-horse-power Triumph vertical motor. The cans are lifted by means of a Triumph hand hoist, and a dump with dip tank serves as a thawing apparatus.

A direct expansion piping system of 2700 feet of two-inch piping keeps the cold-storage rooms at the required temperature.

All the corkboard insulation, which is of the Nonpareil brand, is furnished by the Armstrong Cork & Insulation Co. of Pittsburgh, Pa. It is applied in two three-inch layers on the bottom of the freezing tank, flooded with asphaltum; three layers of three-inch Nonpareil corkboard on the engine side of the tank, and the other three sides are insulated with 10 inches of granulated cork, while the top is flooded with asphaltum in addition. Storage-rooms are covered with two layers of two-inch corkboard on the outside walls and two layers of two-inch corkboard on the partitions. The floors are insulated with two three-inch layers, each layer being flooded with cement grout.

After the fowls are dressed they are hung on portable

racks and placed in the freezing-rooms until frozen. From the freezing-rooms the poultry is placed in cold storage, where it is graded and dry packed, preparatory to shipment.



about one-half. On this account, therefore, the company states it has proven itself splendidly adapted to use in factories and stores where the high-watt lamps are used. The fixture is well made, and presents a slight appearance.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating to cotton matters.

Arlington Cotton Mills.

The Arlington Cotton Mills' additional building at Gastonia, N. C., will be of mill construction, 205x57 feet (not the smaller size reported last week), costing \$20,000. Its equipment will comprise 10,000 spindles and accompanying machinery. J. A. Jones of Charlotte is the building contractor, and R. C. Biberstein, also of Charlotte, is the engineer-architect in charge.

Textile Notes.

Statesville (N. C.) Cotton Mills will build addition to contain 3000 spindles.

B. H. Merck, hosiery manufacturer, Gainesville, Ga., will organize another hosiery mill company, this new enterprise to be capitalized at \$10,000.

Knoxville Spinning Co., Knoxville, Tenn., has increased capital stock from \$50,000 to \$100,000 and will increase manufacturing facilities.

Wilmington (N. C.) Hosiery Mills has been incorporated by John H. Kuck, R. E. Calder and Milton Calder, the capital stock being \$100,000.

Columbia (S. C.) Cotton Products Co., capital \$5000, has been incorporated with officers as follows: A. M. Withers, president and treasurer; J. H. Raines, vice-president; Miss Julie Heyward, secretary.

Charles Page, Tulsa, Okla., and associates are progressing with plans for the cotton mill lately mentioned as to be built at Sand Springs, near Tulsa. They propose to install about 50,000 spindles, looms, etc., for manufacturing cotton cloth. The architect, engineer or manager has not been selected.

Southern Graphite Co.

Eighty acres of land will be developed by the Southern Graphite Co. of Ashland, Ala., whose organization was lately announced. A daily capacity of 125 tons of crude graphite ore is proposed, the equipment to include crushing and separating machinery. This company invites estimates on 25, 50 and 75 horse-power electric motors and on four and six-inch second-hand wrought or cast-iron pipe. G. A. Mattison is president.



candle-power and communicated to the lamp-base and fixtures to such an extent that it is next to impossible to handle them. In some cases the heat was so great as to cause parts of the fixtures to fuse together.

By making the fixture in two parts, securely fastened together but separated from each other by bushings, and introducing air holes in the lower part, air currents are said to be formed producing sufficient ventilation to

Classified Opportunities

MINERAL AND TIMBER LANDS WATER POWERS MISCELLANEOUS PROPERTIES

FOR SALE or exchange for improved city property:

40-acre farm in Amherst county, Va.
104-acre wood tract, close to Petersburg.
45 acres water front in Gloucester Co., Va.
26 acres in Surry Co.

Valuable water front in heart of Norfolk harbor.

Luther Sheldon, 128 Atlantic St., Norfolk, Va.

HAVE YOU A VALUABLE PROPERTY FOR SALE? Farm, timber land, mineral property or any other? We can help you get in touch with possible purchasers by an advertisement in these columns. For rates see head of this department.

MANGANESE PROPERTY WANTED

WANTED—A first-class manganese proposition. Party expects to make tour of inspection of Southern States about Nov. 1. Address Box 290, Ishpeming, Mich.

IRON OF PYRITES PROPERTY

NOW is the opportune time to buy iron of pyrites property. Houston & Liggett, Lewisburg, Tenn., have it. Write them for full particulars.

GRANITE

FOR SALE OR LEASE—9 acres of granite, partly developed, within 150 yds. of side-track. For further particulars write Secy. Board of Trade, Lithonia, Ga.

BAUXITE

FOR SALE—Bauxite deposit in central Arkansas field, on main line railroad; high percentage of aluminum. Write F. B. Hopkins, Dardanelle, Ark.

MICA DEPOSITS

MICA.—For Mica and Rich Mica deposits address J. L. Mitchell, P. O. Box No. 4, Birmingham, Ala. I have the best quality, and plenty.

COAL PROPERTY

FOR SALE OR LEASE—Coal mines ready for business, store, mules, houses; a fine seller; immediate possession; small or large investment; bargain for the right man or company.

C. B. Graham (Owner),
Charleston, W. Va.

COAL LAND

FOR SALE CHEAP TO CLOSE AN ESTATE.—24,000 acres good coal land with a mine ready to operate; power plant, mining machines, cars, etc.; 14 miles of standard and narrow-gauge railroad, connecting with the Southern Ry. at Lin Rock, Ala., 65 miles westerly from Chattanooga; 4 locomotives, cars; 80 dwellings and large commissary. Much valuable hardwood timber with two good sawmills; most of the land on Cumber land plateau suitable for agriculture when cleared, and two improved farms. Coal known locally as Belmont Block, very hard, high in volatile matter, containing some cannel-coal (co-related to Bon Air seam of Tenn.) excellent for domestic use. Low freight rates and best of markets. For full particulars, price and terms address F. D. Pierce, Bridgeport, Ala.

COAL LANDS FOR SALE.—2500 acres fee simple in Kentucky, near railroad; six workable seams, the largest 10 feet; clean coal; title good. Particulars on request. Stras & Persinger, Inc., Roanoke, Va.

FOR SALE.—5000 acres fine coal land, 8 veins, 4 to 7 ft., worth a million dollars; safe and sane investment for \$130,000; one-third down, bal. 1 and 2 years. Geo. Berlin, Kermit, W. Va.

TIMBER

REAL TIMBER BARGAIN.—50,000,000 ft.; 70% N. C. pine, poplar and cypress, all original growth; on Southern R. R. in South Carolina. Liberal terms and low price. J. P. Mulherin (owner), Augusta, Ga.

SIX MILLION FEET of hardwood timber for sale in ten miles of Macon, Ga. Touches the Southern Railroad. Price \$2500. Address Box 393, Macon, Ga.

LUMBER

FOR SALE.—200 M ft. 4-4 No. 2 com. ash, 200 M ft. 5-4 No. 1 com. ash, 125 M ft. 5-4 No. 2 com. ash, 100 M ft. 4-4 1 shop cypress, 250 M ft. 4-4 No. 1 com. cypress, 150 M ft. 6-4 No. 1 com. elm, 750 M ft. 4-4 No. 2 com. plain oak, 75 M ft. 4-4 No. 1 com. Qtd. W. oak, 125 M ft. 4-4 No. 2 com. Qtd. W. oak. Lee, Wilson & Co., Navarre Bldg., St. Louis.

TIMBER LAND

FOR SALE.—Several desirable pieces of timber at bargain prices. If you are in the market and want a money-maker, write George J. Philip, Box 42, Oil City, Pa.

FOR SALE.—Two Florida yellow pine limbs and turpentine products for quick sale at a bargain. Will stand all investigations. L. N., Box 596, Buffalo, N. Y.

RATES AND CONDITIONS

Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 25 lines. In estimating the cost, allow seven words of ordinary length to a line. When the advertisement contains a number of long words, proper allowance should be made. Terms: invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year as follows: 100 lines, 18c. per line; 300 lines, 16c. per line; 500 lines or more, 15c. per line.

TWO FIRST-CLASS TIMBER PROPOSITIONS

—3200 acres in Arkansas on Ouachita River; fine river bottom land; river and railroad transportation; cruised 18,000,000 feet of oak, gum and other hardwoods; price \$80,000, on easy terms; can make the timber more than pay for the proposition. Also 3300 acres in Louisiana; railroad transportation; 16,000,000 feet virgin timber, of which 2,500,000 feet is the very best quality of ash, suitable for export market; price \$45,000, also on easy terms. S. T. Randle, Paducah, Ky.

TIMBER LAND AND SAWMILL

FOR SALE AT SACRIFICE.—150,000,000 feet high-grade timber and land with 100,000-foot sawmill; well equipped and desirably located; easy terms to right parties. Adress 1855, care Manufacturers Record, Balti-

FARM AND TIMBER LANDS

SEVEN MILLION FEET of good saw timber, mostly yellow pine; nice size; long and smooth; together with 1568 acres of good land in Amelia Co., Va. This property has never been on the market before. Price \$33,000. Green & Redd, 9th and Franklin Sts., Richmond, Va.

FOR SALE AT A BARGAIN.—Sixteen thousand (16,000) acres of timber land, grazing, farm and fruit land, direct from owner to purchaser without commission. T. B. Finley, Wilkesboro, N. C.

FOR SALE.—12,000 to 100,000 acres rich Florida land. Several large tracts timber. Farmers' Land Loan & Title Company, Albany, Ga.

WE OWN LARGE TRACTS OF TIMBER LANDS, cut-over lands and colonizing lands. If interested, address H. H. Wefel, Jr., & Co., Mobile, Alabama.

TWO MILLION FEET of good saw timber (by estimate), together with 450-acre farm. All for \$7500, 5 miles from station. Green & Redd, 9th and Franklin Sts., Richmond, Va.

WRITE FOR OUR new booklet containing Virginia farms, large and small, and timber investments. Virginian-Seaboard Realty Co., Alberta, Va.

COLONIZATION LANDS

COLONIZERS AND INVESTORS TAKE NOTICE.—Three biggest bargains in the South.

No. 1.—1800 acres in Tyrrell county, 8 miles from Columbia, county seat; 800 acres high pine land, 1600 acres swamp land; good natural drainage; pine and cypress timber sold for 5 years; standard-gauge road will be built from land to Columbia to handle the pine and cypress timber; will cut from 5,000 to 6,000,000 feet of gum timber, worth \$1 now; well located; \$4.50 per acre, with satisfactory terms.

No. 2.—1200 acres swamp land, Washington county, within 3 miles from Plymouth, the county seat; on Roanoke River; will cut 5,000,000 feet of gum timber stumpage, \$1; well located; price \$4.50 an acre; satisfactory terms.

No. 3.—2100 acres in Beaufort county; best farming adjoining improved farms; finest farming land in the county; good shape; great land; will cut 4000 feet of timber per acre stumpage, \$2.50; finest development proposition in the county; price \$13.50 an acre; satisfactory terms.

Will take good bonds in part payment of any of above. Washington-Beaufort Land Company, Washington, N. C.

FARM.—Colonize and Stock-Raising Proposition. I have 6137 acres, only 10% waste, rich black muck and gray loam, no fertilizer needed, 6 miles of best harbor on Atlantic coast, $\frac{1}{2}$ mile of deep-water transportation; has 3½ miles of R. R. frontage; station, postoffice, store and warehouse; 16 R. H. and 18 R. H. and 15 tenant-houses, all out-houses and barns necessary; will grow anything but wheat; 20 acres 25-year-old finest variety paper-shell pecans that net average income of \$4000 per annum, 8% on \$50,000, leaving over 6000 acres to farm, colonize and raise stock; about half way between Jacksonville and Brunswick, Georgia; about 25 to 30 miles to Cumberland and Jekle Island. Price \$50,000—\$15,000 cash; balance reasonable terms. Improvements worth \$20,000. Owner old; retired; returned to native State. G. M. McKinnon, Peters Bldg., Atlanta, Ga.

FLORIDA.—\$8000 acres cut-over land lying between Lake Crescent, Lake Louise and Lake George in Putnam and Volusia counties, traversed by main line of A. C. L. Railroad; large portion especially adapted to orange and grapefruit culture; balance finest potato and general farming land; lands all around selling \$20 to \$100 per acre. My price, \$10 per acre in a body; terms. Correspondence solicited. Chas. A. Brown, Jr., 30-31 Buckman Building, Jacksonville, Fla.

FOR SALE.—At a sacrifice, five acres best combination fruit and vegetable land, located at Zephyrhills. H. M. Brockell, Tampa, Fla.

PECAN AND ORANGE GROVE FOR SALE.—106-acre plantation for sale at a bargain; house, barn, live stock; everything complete. Owner lives abroad, and owing to the war must sell. For price and full particulars apply to David S. Woodrow, Ocala, Fla.

FLORIDA.—\$8000 acres cut-over land lying between Lake Crescent, Lake Louise and Lake George in Putnam and Volusia counties, traversed by main line of A. C. L. Railroad; large portion especially adapted to orange and grapefruit culture; balance finest potato and general farming land; lands all around selling \$20 to \$100 per acre. My price, \$10 per acre in a body; terms. Correspondence solicited. Chas. A. Brown, Jr., 30-31 Buckman Building, Jacksonville, Fla.

GOOD 533-ACRE FARM, 3 miles from station, on Richmond-Washington Railroad. \$5000. Very cheap. Green & Redd, 9th and Franklin Sts., Richmond, Va.

TWO FINE FARMS in high state of cultivation, with good residences, large barns and other farm buildings, bearing orchards in the heart of the apple-growing section of the Valley of Virginia, strong land well watered and located near railway stations of two railroads, churches, schools and good neighbors. Address W. Roy Stephens, Winchester, Va.

FOR SALE.—Separately or together, tracts, 1200 and 1280 acres, west of Brookville, Hernando Co.; some Gulf frontage; finest fruit, farm and truck land; good hunting and fishing. Price \$11.25 per acre, half cash, balance to suit. Address L. B. McRae, 1920 Dekle Avenue, Tampa, Fla.

CHOICE citrus and truck lands for sale in the Manatee River section of Manatee County, Florida; also water fronts. Send for survey reports and views. Manatee River Land Co., Inc., 101½ Franklin St., Tampa, Fla.

100 ACRES hammock land, good for all kinds farming; driven well; good timber near Bartow, Fla. J. M. Bradley, 807 Main St., New Haven, Conn.

FOR SALE.—13-acre truck farm, Sanford, Fla.; small house and barn; 3 acres tillable; artesian well and landing siding on property. Address F. R. Durham, Red Bank, N.J.

GEORGIA

100 ACRES at Lewis Station, on Savannah & Western Railroad, 50 miles from Savannah; 60 acres under cultivation. Good, black soil; plenty of wood. Thirty-five hundred \$100 sold at once. H. Sanford Haupt, Savannah, Ga.

MISSISSIPPI

PLANTATION FOR SALE.—I have a piece of 556 acres, six miles southeast of Greenwood, Miss., on what is known as the Humphreys Highway, built by the government and county, which highway extends through Greenwood. There are 350 acres in cultivation, some five or six arable wells; good dwelling; well improved and all susceptible of cultivation except about 50 or 60 acres. As fine land as there is in the delta. Rents readily from \$7 to \$10 an acre; \$80 an acre, on long time, with 6 per cent. interest. Apply to A. F. Gardner, Greenwood, Miss.

MISSOURI

MUST SELL.—118 acres alfalfa land, 75 in cultivation; good buildings; will grow 100 bu. corn or 2500 lbs. cotton per acre; 5 acres alfalfa per year; in S. E. Mo. \$75 per acre. J. W. Bader, owner, Blytheville, Ark.

NORTH CAROLINA

FOR SALE.—A farm near Guilford College. Land and timber. Level land and bottom. East boundary a clear stream of pure water. L. L. Hobbs, Guilford College, N.C.

SOUTH CAROLINA

TWO FINE FARMS FOR SALE, one containing 1100 acres, 175 under plow; nice dwelling and outbuildings; \$10 per acre. One containing 400 acres, 150 acres under plow; flowing well; some buildings; \$15 per acre. Both farms near Southern Railroad and graded school and church.

TEXAS

16,000 ACRES joining town of Midland, located in shallow-water irrigation belt, with number of wells now pumping from 500 to 1500 gallons per minute; fine alfalfa, truck and fruit lands; ideal property to cut up and sell in small tracts; ideal climate. Owner will take \$25 per acre. Other tracts G. M. Adams, Crandall, Texas.

A SACRIFICE SALE.—The Best Bargain in the South.—To settle an estate we offer 4000 acres of well-drained land 6 miles from Houston, Texas, at \$25 an acre, which is less than one-half its value. A great subdivision proposition; must be sold at once. Dr. T. J. Dwyer, 904 Scanlan Bldg., Houston, Texas.

EAST TEXAS is fastest growing section of great State; land is increasing rapidly. I can furnish list of real bargains. What's better, come and let me show you. R. V. Haggard, Hallsville, Texas.

VIRGINIA

VIRGINIA ESTATES.—Colonial houses, plantations, farms, suburban homes, Albemarle, Pippen orchards, timber lands. Write for what you want. We have it. H. N. Flanagan & Co., Charlottesville, Va.

MUST BE SOLD AT ONCE.—Splendid farm in Mathews county, Va., bordering on salt water; modern improvements; fine bathing and fishing; lots of fruit and oysters. Price \$16,000. J. H. Jordan, Cardinal, Va.

TO TRADE for city income property—fine farm in Virginia, value \$30,000; at station on Southern (main line) Railroad; in high state of cultivation; fine and valuable orchard; good dwelling of 11 rooms; all necessary outbuildings in good condition; schools, churches, stores and mills nearby. Address P. A. Green & Co., 263 Park Bldg., Richmond, Va.

GOOD 533-ACRE FARM, 3 miles from station, on Richmond-Washington Railroad. \$5000. Very cheap. Green & Redd, 9th and Franklin Sts., Richmond, Va.

TWO FINE FARMS in high state of cultivation, with good residences, large barns and other farm buildings, bearing orchards in the heart of the apple-growing section of the Valley of Virginia, strong land well watered and located near railway stations of two railroads, churches, schools and good neighbors. Address W. Roy Stephens, Winchester, Va.

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